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**U.S. Department of the Interior  
Bureau of Land Management**

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# **A Plan to Educate Young Americans About Their Nation's Rich Cultural Heritage**

**October 1991**

**Report Authors**

**Mary Tisdale  
Richard Brook  
Bob King  
Shela McFarlin  
Shelley Smith  
Gary Stumpf**



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## **Illustrations**

The illustrations on the cover and throughout the report were drawn by young artists in several states at the request of the authors of this report. The drawings graphically depict how history and archaeology can excite the imaginations of children and help them realize their creative and learning potential. The Iron Horse on the cover was drawn by Joel Eads, age 8.

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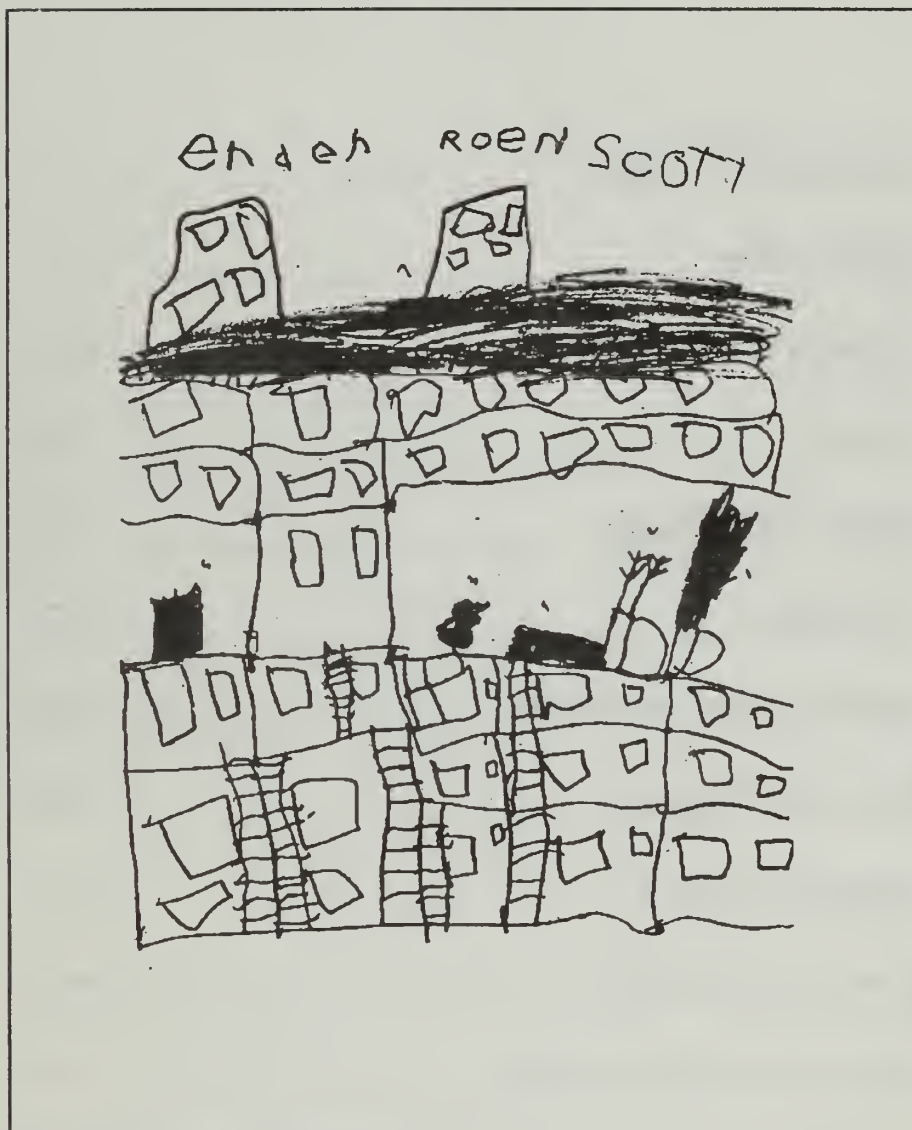


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Indian Ruin by Scott Newman, age 5

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## Executive Summary

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This report presents the recommendations of a Bureau of Land Management (BLM) Working Group on the development of a new program in heritage education under BLM's Adventures in the Past initiative. The program is to serve as BLM's flagship education program complementing existing Bureau education initiatives. The program is being developed to respond to the Administration's commitment to use Federal resources to combat the growing crisis in American education. The proposed strategy is to capture the attention of young people at an early age, sustain their interest through hands-on activities, and involve them in increasingly more sophisticated learning experiences throughout higher levels of learning. Emphasis is given to upgrading students' skills in science, math, thinking, and communicating and strengthening students' sense of responsibility for the stewardship of America's cultural resources.

Recommendations call for hiring an interdisciplinary team of specialists to produce educational programs and products for Bureau-wide use. The team would be located at BLM's Anasazi Heritage Center (AHC) in Dolores, Colorado. Similar teams would be placed at new heritage centers in other locations as these are established. A new staff person would also assist with the development of educational partnerships, which are deemed critical to overall program success.

The programs recommended for adoption would support learning in both formal and informal educational settings and would reach children who are able to visit historic and archaeological sites on the public lands as well as those who are not likely to have this opportunity. Programs proposed to capture students' attention would rely heavily on popular themes and characters and mass media technologies. Efforts to sustain students' interest in learning would focus on hands-on, sensory-oriented activities in a variety of settings. Programs to enhance knowledge and skills would revolve around new and innovative teaching materials and facilities and field and laboratory experiences for both students and teachers. Projected annual costs for proposed programs range from \$1.5 to \$2.8 million for the first five years.





Pony Express Rider by Travis Shelton, age 7



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## Background

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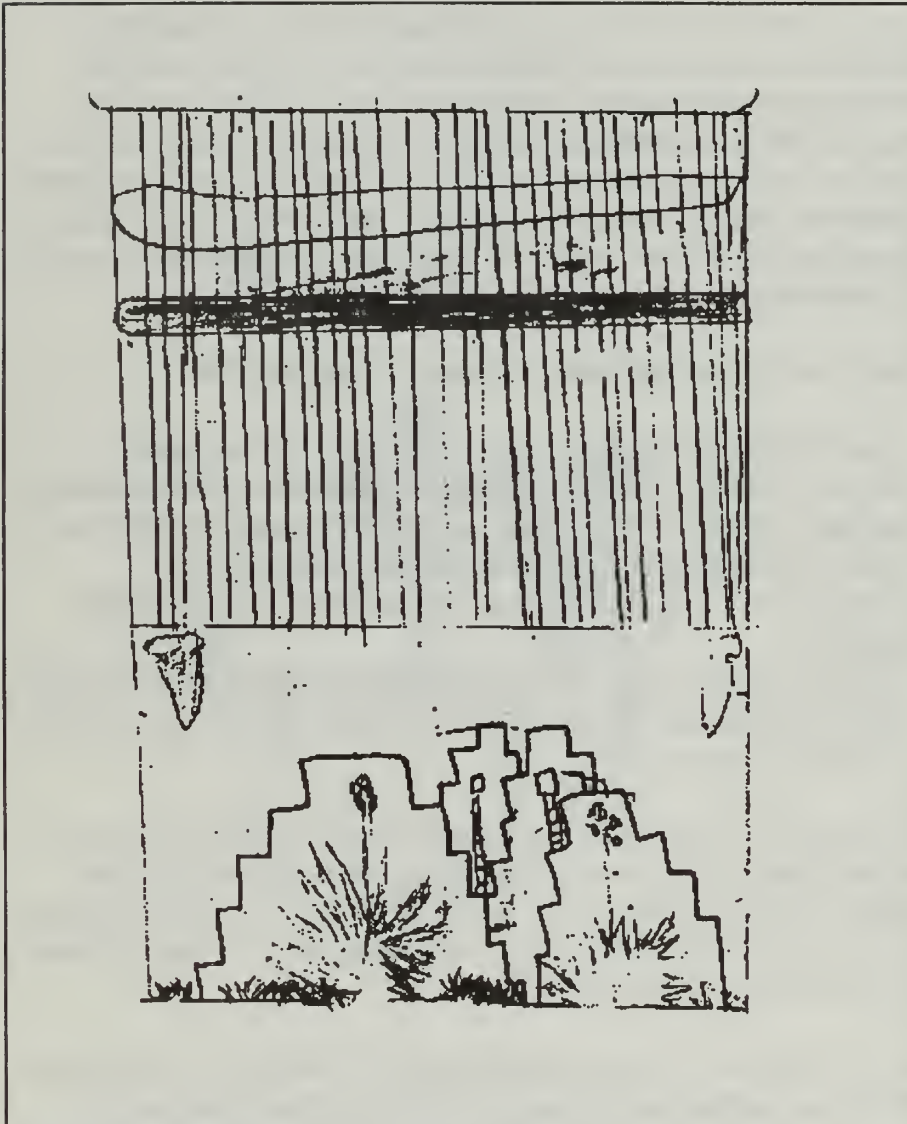
In early 1991 BLM's Director and management team decided that BLM should develop a new heritage education program under the umbrella of the Adventures in the Past program, BLM's public outreach initiative to promote appreciation of America's rich cultural resources. The new program is to be BLM's flagship education program complementing the many other education initiatives currently being pursued by the Bureau, such as the Resource Apprenticeship Program for Students and other national and local initiatives.

Three main factors provided the impetus for this decision:

- The President established excellence in education as a priority for this Administration. The **President's America 2000 education strategy** calls for Federal agencies to set an example for other employers by embarking upon programs of skills upgrading.
- Education is a key component of the **Secretary's Stewardship agenda**.
- BLM's Director has committed to use Bureau resources to establish **BLM as a national expert in one education field** in support of the national education goals.

The decision to focus BLM's national flagship education program on cultural resource education as opposed to other possible areas was made following a review of the many current Bureau education initiatives. This review is outlined in a document titled, "Getting a Perspective on BLM's Role in Education."

BLM's decision to focus on cultural resource education is a fitting one. BLM is steward of an estimated five million cultural properties on almost 300 million acres of land designated for multiple uses. Millions of archaeological and historical sites provide a dramatic record of humanity's 12,000 year presence in the New World on lands now under custody of BLM, and unparalleled opportunities for teaching young people about America's cultural heritage.



Christina Custer, Age 9

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## Strategy Development

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BLM's Office of External Affairs under the direction of Susan Lamson was charged with developing a strategy for the new cultural heritage education program. A BLM Working Group was organized to formulate a strategy. Members of the Working Group are as follows:

### Working Group

Mary Tisdale (chair)	Washington Office - External Affairs
Richard Brook	Washington Office - Cultural Resources
Bob King	Alaska State Office
Shela McFarlin	Anasazi Heritage Center, Colorado
Shelley Smith	Utah State Office
Gary Stumpf	Arizona State Office

This report presents the findings and recommendations of the Working Group. Comments were sought from BLM State Directors on an earlier draft. The Working Group responded to all comments in a separate, 17-page document. In addition, modified language has been incorporated in this final report to address the expressed concerns of commenters regarding elements of the draft version.



Nick Coupens, Age 10

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## Research Findings

Prior to development of this strategy, the Working Group conducted extensive research to obtain information to guide the development of BLM's heritage education program. Personal contacts were made with dozens of education and other organizations and literature searches conducted to obtain information on what teachers need and on what educational strategies are successful in both formal and informal settings. Numerous individuals within BLM were canvassed for information on current BLM educational programs and initiatives in history and archaeology and the needs of individuals involved with those efforts. Ideas were sought on how BLM could best support the national education goals and what makes sense for BLM given its mission, organization, and resources. Detailed information on the individuals and groups contacted and the literature researched are included at the end of this report.

A number of ideas were commonly expressed by the authors, individuals and groups contacted or researched by members of the Working Group. Following is a synopsis of ideas and insights which emerged from these research efforts and which guided the formulation of the Working Group's recommendations presented in this document.



Emily Gadanyi, age 7



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## Characteristics of Effective Teaching Strategies

- place children, not adults, in the role of actors, leaders, teachers
- build on children's prior knowledge
- are interactive and hands-on
- are age appropriate
- present learning as play
- provide experiences where nobody fails
- involve mystery and discovery
- are interdisciplinary
- involve a story or a theme (more important than subject)
- provide visual and other sensory hooks
- imply that problem solving will be fun
- promote discussion
- provide feedback
- repeat an idea or message in multiple contexts
- involve cooperative learning activities
- are conducted in small groups or one-on-one
- are connected to everyday experiences
- are tied to local themes
- lead to concrete results
- are tied to popular culture
- present ideas as images

## Teacher Needs

- Teachers already have crushing teaching loads and lack time to think, study, organize materials, confer with colleagues, counsel individual students, and attend professional meetings. Educational partners, or organizations striving to assist schools, must provide assistance in a way that does not add to the teaching burden.
- Schools are striving to streamline curriculum requirements. Education resources developed by outside partners should be used to support existing curriculum requirements, not add new ones.
- Resource materials developed for teachers' use in the classroom should be tied to the school curriculum, adaptable for use in various contexts and self-contained. They should also be short, inexpensive, and practical. Teachers should not be required to have prior experience to use the materials.

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## Teacher Needs (cont.)

- Elementary teachers have a rudimentary education in science and mathematics, and many junior and senior high school teachers of science and mathematics do not meet standards of preparation in those fields. Teacher training is needed to give teachers themselves hands-on experiences to develop their scientific literacy and their confidence in using innovative approaches to teaching science.

## Archaeology Education

- In general, teachers have minimal experience with archaeology education. A number of archaeology curriculums and resource guides are already available but not widely taught in schools. What is needed is an evaluation of the existing materials and the development of strategies to get them used in the schools to support the teaching of standard subjects.
- Archaeology education is excellent as a basis for interdisciplinary teaching. It can be used to teach geology, biology, paleontology, chemistry, history, anthropology, geography, math, reading, writing, oral presentation, creative writing, art, citizenship, ecology.
- Children are naturally interested in archaeology subjects. They think archaeology is exciting and fun. Through their natural interest in archaeology subjects, students can be stimulated to develop skills in science and mathematics.
- Archaeology education is excellent for the development of problem solving and higher order thinking skills - formulating hypotheses, inference, synthesis, analysis, evaluation.
- Archaeology lends itself to hands-on activities and sensory media.
- Archaeology education engenders appreciation for culture, prehistory, history, anthropology, the environment and science.

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## History Education

- History education should focus on perspectives and processes of change rather than facts.
- Resource materials prepared by school partners should relate to the broad historic themes taught in schools, such as the Westward expansion.
- The use of objects and sensory stimuli helps children relate to historical concepts.
- History education hones skills in data collection and analysis and critical thinking.
- Knowledge of historical issues and perspectives is essential for informed actions by citizens.
- Teaching history through local and personal subjects helps students understand its relevance to their lives.
- Materials should cover the roles of ethnic groups and minorities in the development of America.

## Science Education

- In the international community, U.S. students rank near the bottom in science, mathematics and problem solving.
- Textbooks and other teaching materials in current use are not up to the job and the potential of computers has yet to be realized.
- Research and development on the use of computers and advanced interactive systems for teaching and learning should be conducted to support efforts to improve science literacy.
- Current trends in science education are to develop interdisciplinary teaching materials and innovative, hands-on approaches. Interdisciplinary materials expand the number of ways in which students can connect new concepts to prior knowledge and interests.



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## Television

- Television is a very powerful medium. Children like television and watch about 25 hours a week - by high school graduation, they will have spent more time watching television than attending classes.
- Television is a democratic medium: providing identical programming to all children, regardless of where they live or the local school's funding.
- To capture viewers' attention for educational purposes, television programs must first entertain.
- Successful television programs are less dependent on the subject than the story that is told.
- Television can provide opportunities not otherwise available in a classroom setting - an interview with a famous scientist, a field trip to a remote location, visual effects to illustrate a concept.
- Carefully planned uses of television are team efforts, requiring expertise not only in production but also in content, curriculum, educational research, evaluation.
- When a television show can succeed in reaching a voluntary audience with quality materials, chances are good that those materials can be used in additional settings, such as schools, museums, science clubs and other community organizations.
- Building education into television programs with established appeal eliminates or reduces the need to establish credibility with students.
- Television is not a substitute for formal study but it can arouse curiosity to motivate formal study.

## Museums and Other Informal Learning Centers

- Informal science education in museums, zoos, after-school programs and other learning centers plays an important role in nurturing students' interest in learning and encourages a pattern of exploring, self-education and recreational learning.
- Young people can learn most readily about things that are tangible and directly accessible to their senses - visual, auditory, tactile, and kinesthetic. With experience, they grow in their ability to understand abstract concepts, manipulate symbols, reason logically and generalize.

- 
- Education in museums and other informal settings is democratic and provides an opportunity for learning without risk of failure. Particularly for women and other underrepresented groups, informal science education develops students' sense that science learning is attainable and science is open to their participation.
  - After school programs such as the "Hands-On-Science" Program started in Montgomery County, Maryland, by parent volunteers are growing in number and scope. Families in which both parents work are "hungry" for quality enrichment programs that can be conducted in the school setting after the end of the normal school day when parents are still working.

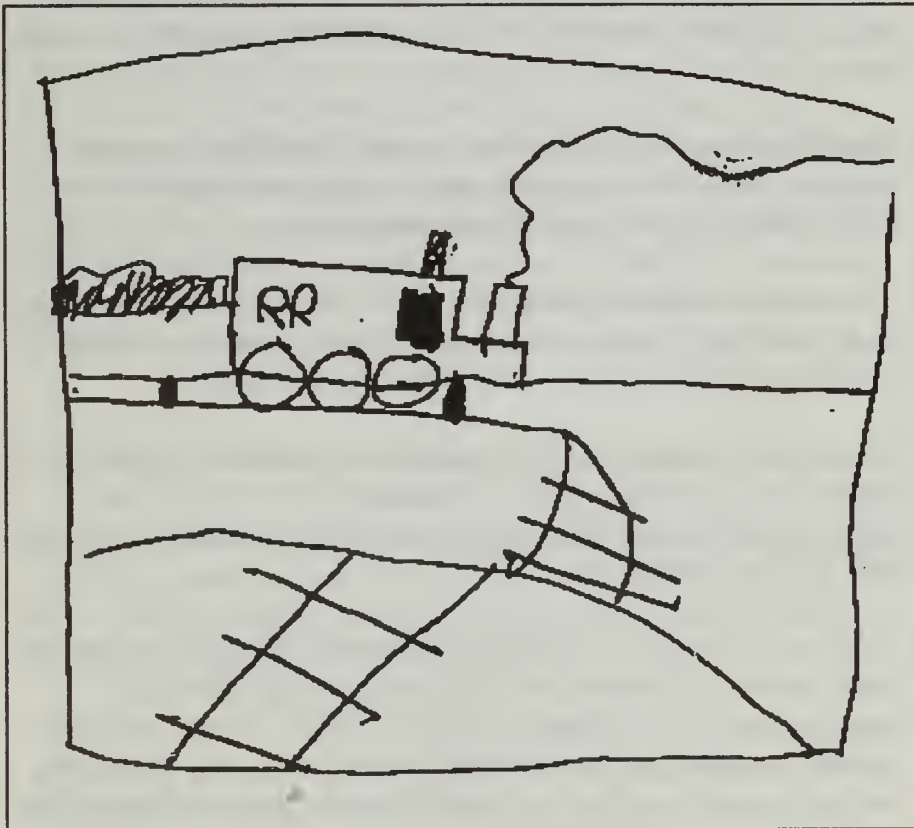
## Computers

- Computer literacy is an essential life skill. By the time they finish school, all students should have had supervised experience with computers.
- There is an "explosion" of interest in multi-media programs which integrate sound, video, printed material, and computer programs to involve the user in an interactive learning process.
- Most schools do not presently have the technology to take advantage of the latest multi-media technologies, but are expected to acquire it within the next five years as costs for equipment decline.
- Educational computer programs can provide students with quick feedback at a time when they are interested in receiving it, and allow them to "navigate" through educational activities according to their personal areas of interest.
- Children may be more comfortable with computers than are teachers. Many teachers still do not feel confident in using computers as teaching aids, even when equipment is available. Opportunities are needed for teachers to develop their confidence in using computers and to educate them about the possibilities of computers for teaching and learning.

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## Magazines

- Teacher magazines are an excellent medium for reaching large targeted audiences. For example *Science and Children*, a magazine for science teaching in the elementary grades has a reading audience of 60,000.
- Magazines reach their audiences through powerful visual as well as non-visual forms of communication.
- Because of the frequency of their publication, magazines are flexible and can address current issues, trends, etc.
- Teacher magazines are an excellent medium for providing teachers with “ready-to-go” activities, poster inserts, etc. for use in the classroom.
- The editorial staffs of magazines have expertise and research data on the needs and wants of their target audiences.



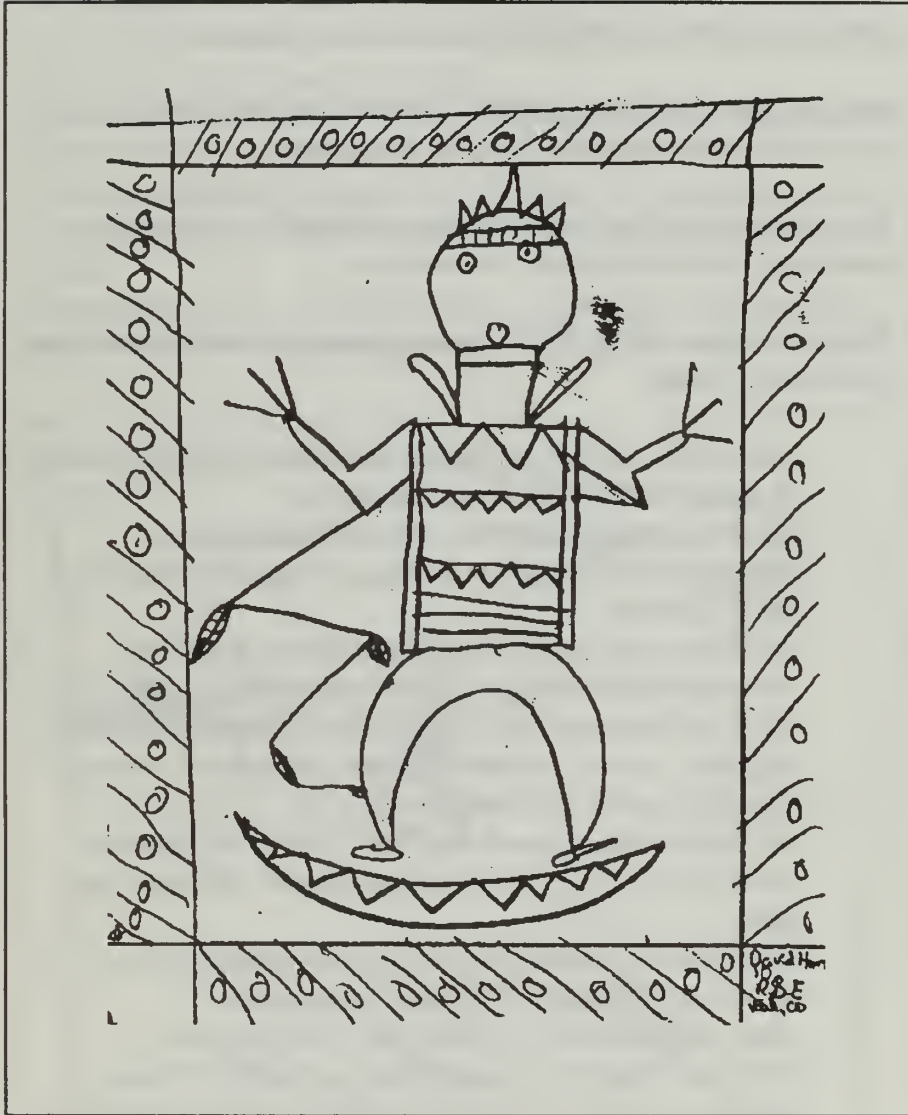
Ryan Barna, age 7

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## What Makes Sense For BLM

- BLM is already pursuing a broad range of cultural education initiatives. The national program should build on these initiatives.
- Mechanisms and resources are needed to improve the quality of existing initiatives and to give them collective impact.
- New programs should be initiated to reach a national audience and to provide learning opportunities for all children.
- Innovative approaches and technologies should be developed to keep pace with current trends in education.
- Programs should reflect BLM's unique qualities, identity, strengths, limitations, mission:
  - BLM lands are located throughout the U.S., with the majority being found in the West and Alaska.
  - BLM has special relations with and obligations to Native Americans and other ethnic groups with traditional ties to the lands.
  - BLM has a presence in local communities across the West and other scattered points throughout the U.S.
  - BLM is caretaker of an estimated five million cultural properties, most in remote locations and not yet surveyed, excavated and/or interpreted.
  - BLM archaeologists and historians have an exhaustive workload and cannot easily accommodate additional burdens.
  - BLM has few education specialists or interpreters.
  - BLM has a highly decentralized organization.
  - BLM has expertise in a broad range of disciplines.
  - BLM has expertise in geographic information systems, historic records management, surveying, environmental sciences.
  - In general, public recognition of BLM is low.
  - BLM has numerous established partnerships with a broad range of profit and non-profit organizations.
  - BLM has a strong volunteer workforce.





David Hanea, Age 10

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## Theme

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### People on the Land

The proposed theme for BLM's national cultural heritage education program is "People on the Land," focusing on the relationship between humans and the natural landscape upon which their lives depend. On the BLM public lands, this relationship spans the entire record of human history on the American continent, from 12,000 years ago or longer to the present.

By examining the relationship between people and the land spanning thousands of years of prehistory and centuries of history, young people can learn about the diverse and interrelated uses of the land. They can draw lessons about the successes and failures resulting from the wise, and sometimes unwise, use of our natural resources and apply those lessons to problems of today. They can learn how archaeologists use scientific methods to interpret the physical evidence of previous cultures and how historians read and interpret recorded accounts of the past. By contemplating the meaning of patterns etched in rock and other evidence of the past, young people can hone skills in scientific inquiry, problem solving, observation-inference and other critical thinking skills. They can become acquainted with our Nation's rich and diverse cultural heritage and develop a better understanding of how the history of our society and our land has shaped who we are today. By teaching young people about the rich but fragile record of our heritage, BLM can enhance their understanding of their place in the human continuum and enlist their future participation in the conservation of our irreplaceable cultural legacy.



Karen Steimle, Age 10



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## Goals and Strategy

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The proposed educational strategy is intended to capture the attention of young people and, then, involve them in increasingly more sophisticated learning experiences. Three program goals have been developed to reflect this strategy. They are intended to shape educational opportunities that support the President's national education goals, particularly those addressing reasoning and communication skills and math, science and history education. At the same time they would support two of the Secretary's priorities - education and stewardship of our public lands.

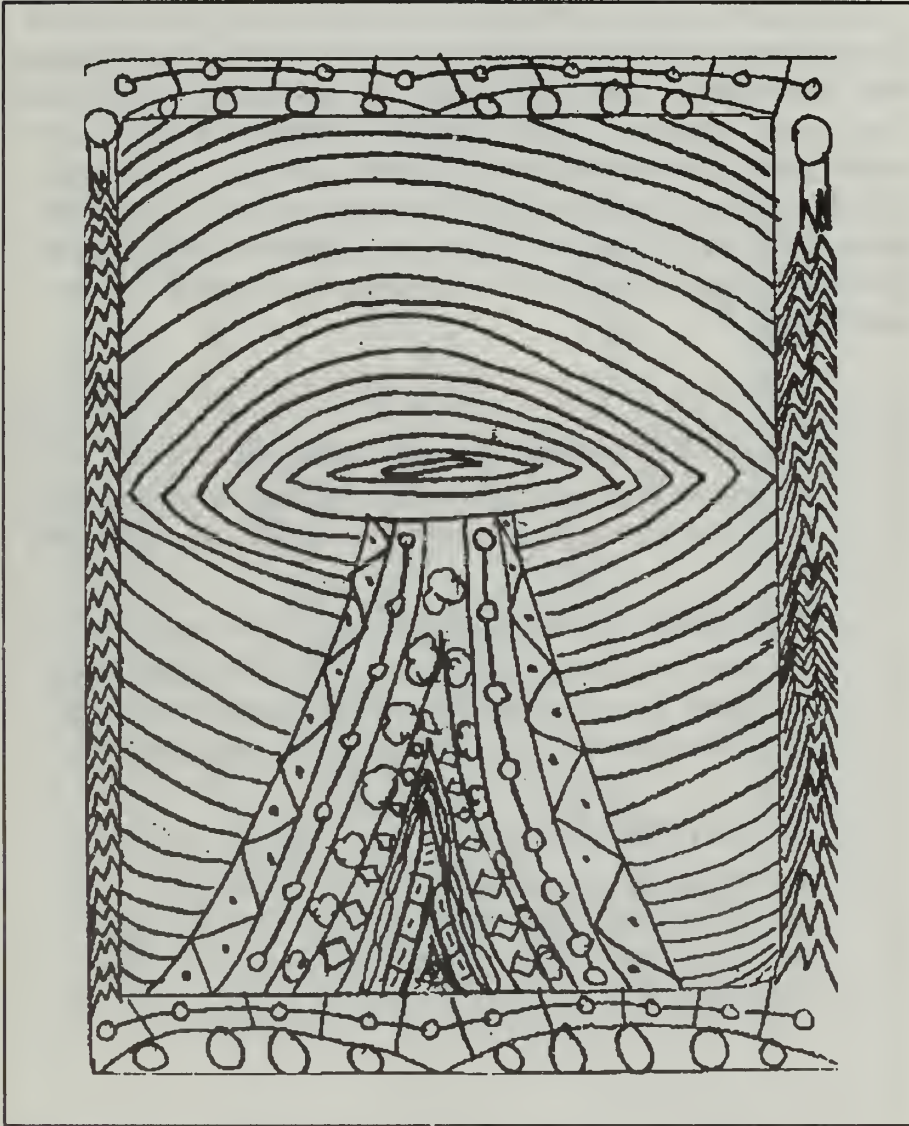
**Capture** students' interest in history, archaeology, and science at an early age and develop their awareness of the diverse and fragile cultural resources\* on the public lands.

**Sustain** students' interest, through "hands-on activities," in history, archaeology and science throughout higher levels of learning and strengthen their sense of personal responsibility for the stewardship of America's cultural resources.\*

**Enhance** students' and teachers' science literacy, their knowledge of America's rich and diverse cultural heritage and students' skills in thinking and communicating through studies and experiences involving history and archaeology.

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• **Cultural resources** refers to cultural properties of both prehistoric and historic origin. A cultural property is a definite location of past human activity, occupation, or use, identifiable through field inventory, historical documentation or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places. Cultural properties are concrete, material places and things.



Martha Gold, age 10

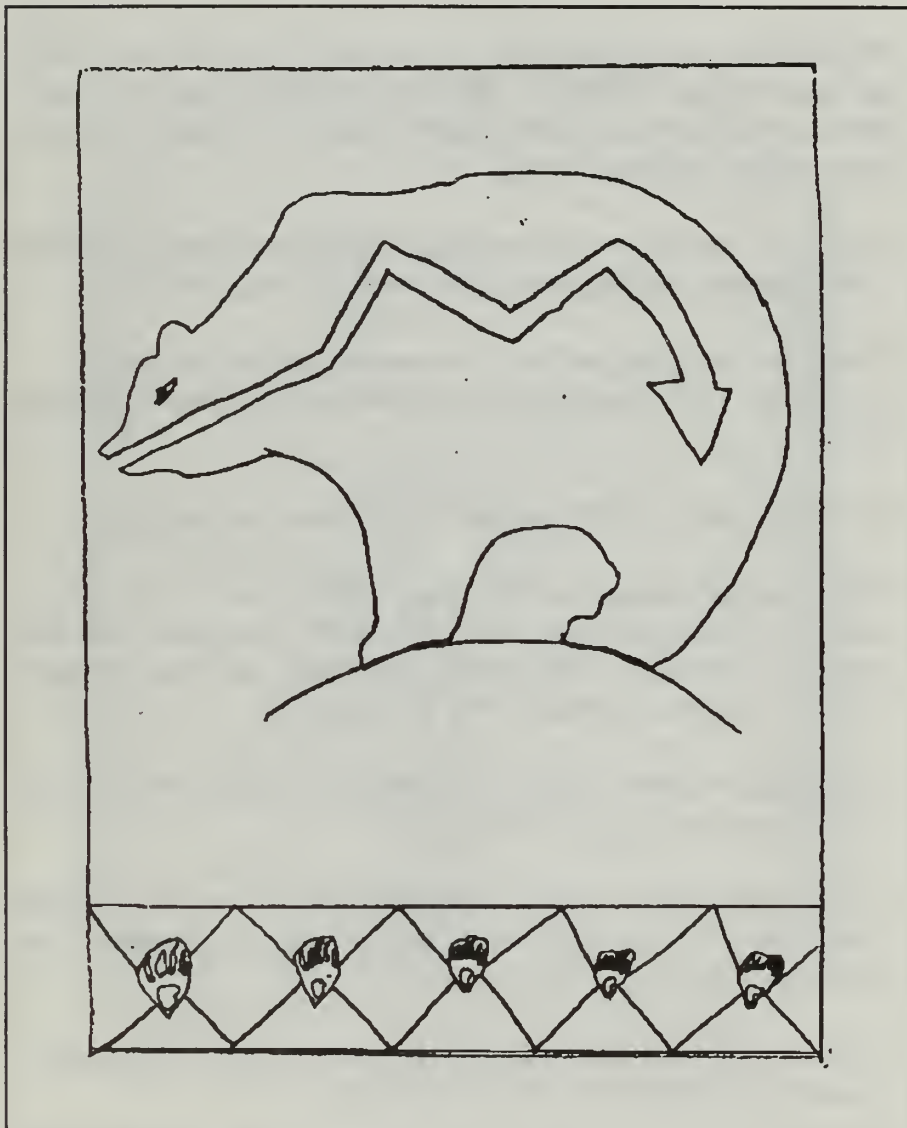
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## Principles

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The following general principles are endorsed for all programs developed as components of BLM's national heritage education program. Adherence to these principles would be monitored regularly through the program evaluation process.

- Evaluation strategies for all programs should be developed up front and programs routinely evaluated for effectiveness and impact.
- Programs should include built-in incentives or mechanisms to encourage and maximize participation by volunteers and other partners.
- Programs should not impose additional burdens on teachers.
- Careful consideration should be given to the role of BLM professionals involved with educational programs to ensure the most effective use of their time. For example, the proper role of professionals may be in teaching teachers rather than students.
- All programs should ensure gender and racial equity and be accessible to people with disabilities.
- All programs should have clearly identified target audiences and use media and teaching strategies appropriate to the target audience and program goals.
- In developing programs, staff should consider how to make them available to the broadest possible audience.
- Programs should include elements to highlight America's rich, multi-cultural heritage.
- In developing programs, staff should involve and obtain input from interested or affected audiences in the preparation of education materials, particularly when that group's culture or history is being interpreted.



Josh Olson, Age 11



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## Staffing and Organization

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### Overall Program Coordination

Overall program coordination is essential to sustain BLM's heritage education effort as a unified national initiative, and to ensure that programs are funded according to the priorities set forth in this report. Inasmuch as BLM does not have an office of education to oversee such coordination, it is recommended that, in the short term, the Washington Office of External Affairs and the Cultural Resources staff within the Branch of Recreation, Cultural Resources and Wilderness, jointly share this responsibility. As programs are developed and new activities emerge, the demands for coordination will increase. Consideration should then be given to establishing a Washington Office function to oversee policy and funding issues for BLM's heritage education program.

### Imagination Team

Faced with budget constraints, the undeveloped nature and remote and Western location of most BLM cultural properties, and the taxing workloads of BLM archaeologists and historians, the Working Group wrestled with how best to provide educational programs that would establish BLM as a national leader in heritage education.

After reviewing several options the Working Group ultimately determined that the most sensible approach in light of these circumstances was the establishment of interdisciplinary teams at heritage centers.

For the first five years, it is proposed that a team of ten professionals be hired and housed at BLM's Anasazi Heritage Center (AHC) in Dolores, Colorado. In time, it is envisioned that similar "Imagination Teams" would be established at other heritage centers, preferably in key population areas or tourist areas. Ultimately BLM would have a network of heritage centers that could provide quality heritage education programs for their surrounding areas.

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## Team Approach

A team approach was deemed more efficient than hiring education specialists in each state or hiring staff to provide educational programs at individual cultural sites. Quality education programs and materials are team efforts, requiring expertise in a number of disciplines. Individual education specialists alone could not support most of the activities/programs proposed in this report. To establish BLM as a national leader in heritage education, BLM must have staff with a mix of credentials who can collaborate on educational products and programs for both local and national audiences and keep abreast of current trends in education, new educational technologies, and education efforts of other bureaus and organizations.

The Imagination Team would serve as clearinghouse for BLM's heritage education efforts. Their primary function would be to develop products, programs and guidance for BLM State offices. The team would include the following specialists:

- 4 education specialists
- 1 visual arts designer
- 1 computer graphics designer
- 1 interpretive writer/editor
- 1 exhibitry/materials specialist
- 1 computer programming specialist
- 1 instructor/driver

The programs and products envisioned for the first five years are outlined in general terms in the following section of this report. An Implementation Plan will be developed by the Working Group to provide detailed information on the Team's functions and responsibilities. To ensure that the Team maintains a Bureauwide, rather than regional perspective, the Implementation Plan will establish a mechanism for all States to provide input to the Imagination Team. A liaison in each State will be responsible for conveying information to the Imagination Team on heritage education program activities and priorities. A Heritage Education Consulting Group composed of Bureau managers will establish overall priorities for the Imagination Team.

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## Single Focus on Heritage Education

To meet the demands already identified, BLM must have staff with a single focus on heritage education whose functions are not co-mingled with those of environmental education or other program functions. In the Working Group's estimation, this is the only way for BLM to achieve excellence in this field, reach a national audience and be on a par with other organizations involved in heritage education such as the National Park Service who already have large staffs devoted to heritage education.

## Team Location

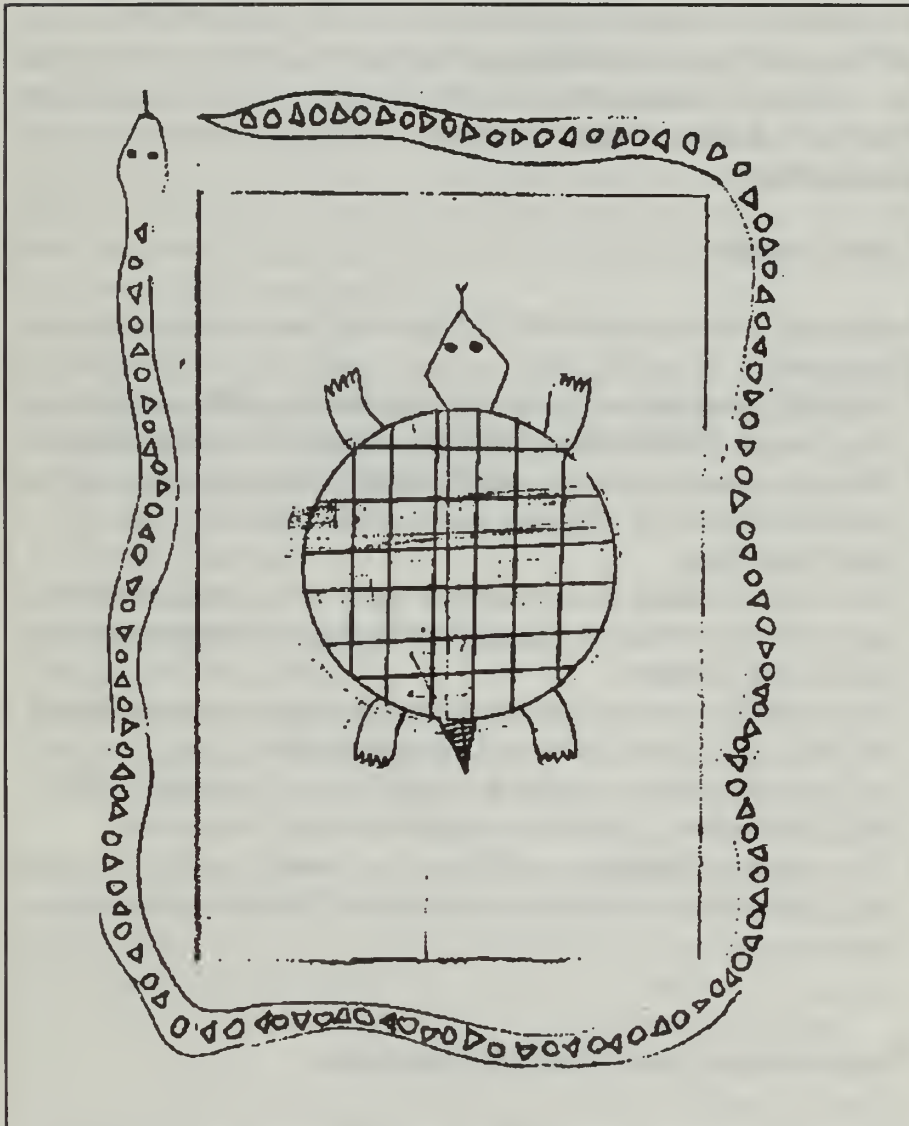
Positioning the team at the AHC is logical and has a number of distinct advantages:

- The AHC is located within easy driving distance of several States, which would facilitate team members' travel to BLM field offices.
- The team could collaborate with the AHC staff and build on the excellent educational programs and materials which they have already developed.
- The AHC is a public facility and new ideas and materials could be tested with visitors to the museum before they are recommended for use in other locations.
- Unlike BLM's Phoenix Training Center or Denver Service Center, the AHC has a clear identity and focused mission as a cultural resources facility and the efforts of the current AHC staff and the newly hired team would be mutually supportive.
- The concept of some Bureau-wide services was originally part of the AHC's charter and master plan, and the AHC is already serving such roles.

## Partnership Coordinator Position

In addition to the Imagination Team, one additional position is proposed to oversee a partnership development program. This person would review State Director proposals for heritage education partnership projects against established criteria and make recommendations to the Bureau Management Team as to which projects to fund in any given year. The person would also facilitate coordination with BLM and Departmental officials, other Federal agencies and partners.





Jennifer Ellis, Age 10

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## Proposed Programs

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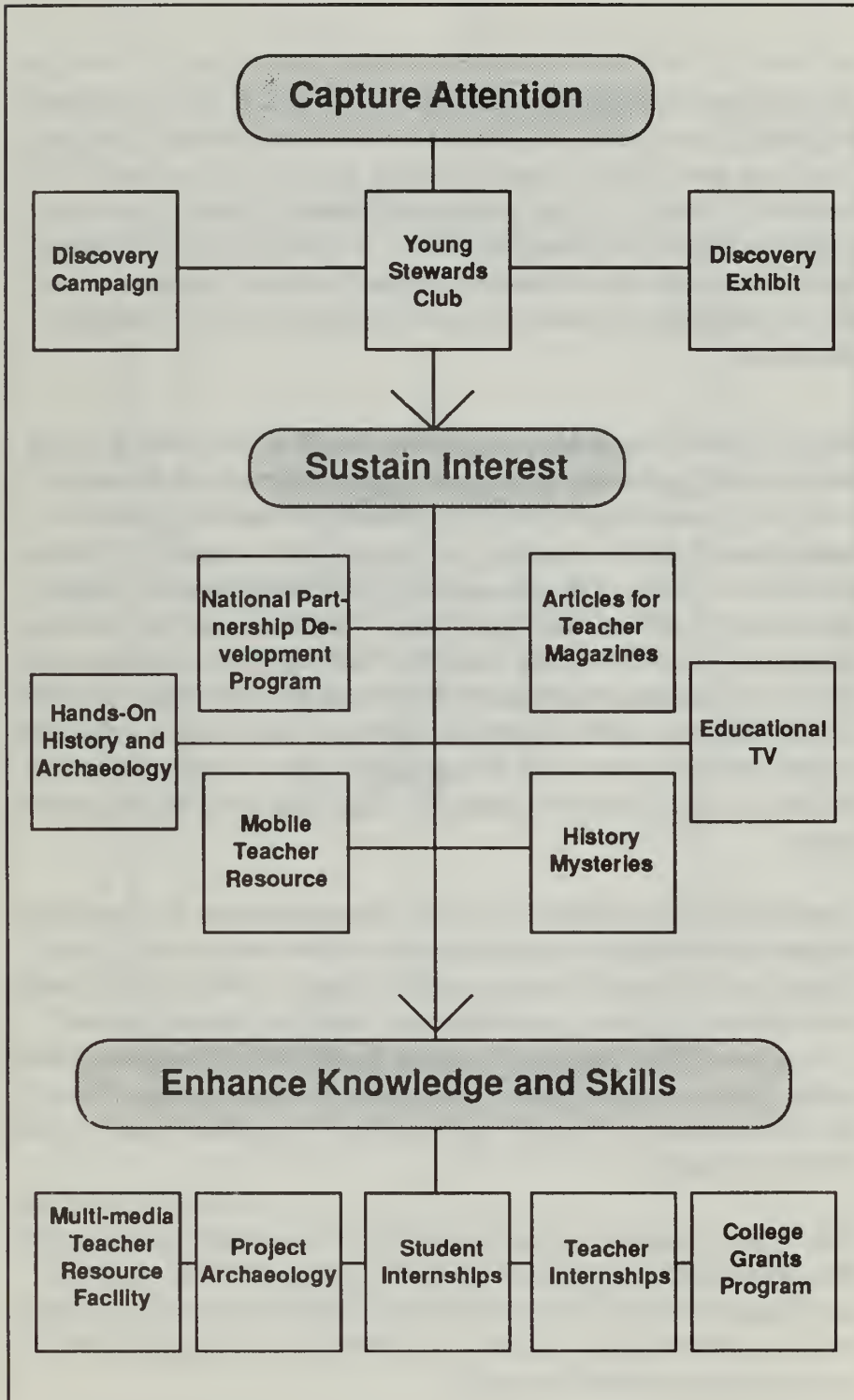
The programs outlined below are intended to give BLM a good start in developing its expertise in heritage education over the next five years. Continued growth will be needed beyond the first five year period to establish BLM as a national expert in this area. While programs are listed in order of recommended priority, it is hoped that all programs can be supported and a balance maintained between both on-site and off-site programs and between general awareness and skill-building programs.

Probably the most enriching experience that BLM can provide young people is the opportunity to see and experience first-hand the homesteads, wagon trails, ruins, rock art, ancient roadways and other cultural resources which color the lands under BLM's custody. Unfortunately, for a variety of reasons, not all children will have the opportunity to have such first-hand experiences. Cultural properties are often remote and difficult to reach, many sites are fragile and unprepared for visitors, schools have fewer and fewer dollars for enrichment activities such as field trips, some parents are unable, or unwilling, to bring their children to see historical and archaeological sites. In cases where children can not come to the resource, BLM must bring the resource to them.

The programs outlined provide a mix. Some initiatives are intended to enhance the educational experiences of children who are able to visit historic and archaeological sites on BLM lands. Other programs seek to bring these resources to children who would not otherwise have such opportunities - through television, magazines, museums and other media. This mix is essential to ensure that all children, regardless of their circumstances, have the opportunity to learn about America's rich cultural heritage.

The extent to which BLM can implement these recommendations will of course, depend on appropriated dollars and partnership opportunities. Support is most likely to be obtained if BLM invests in programs which are of the highest calibre and contribute in a meaningful way to the education of America's youth.

## Program Overview



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## Program Descriptions

**Goal:** Capture students' interest in history, archaeology and science at an early age and develop their awareness of the diverse and fragile cultural resources on the public lands.

Programs developed to meet this goal will target students in the early grades when young people are naturally curious and eager to learn and when their values are being shaped. Programs will reveal the mysteries of past cultures and promote respect for archaeological and historical sites. Archaeology, history and science will be portrayed as **fun, exciting and relevant**. The richness and diversity of our cultural heritage will be revealed, and simple messages will be presented about the methods of archaeologists and historians, the importance of context for understanding the meaning of artifacts and the need for individuals to be involved in caring for our Nation's cultural properties. Programs will "borrow" characters and images with established appeal from today's popular culture to capture a broad spectrum of America's youth. Video and other electronic media will be used as the primary vehicle to communicate these messages.

## Discovery Campaign

A major campaign awareness campaign would be developed under contract with Hollywood Promos, a production company that specializes in pairing the talents and services of hit network television and movie casts with public service causes. The campaign would include radio and television public service announcements, print ads, posters, a 10-minute video for school children using popular cartoon, movie or television character(s), a companion video of equal length underscoring the key points of the show, educational print materials for school children and collateral materials such as apparel, souvenirs, and toys, designed to promote the issues of the campaign. The campaign would be coordinated by the Working Group in conjunction with Hollywood Promos and funded primarily by outside sponsors.



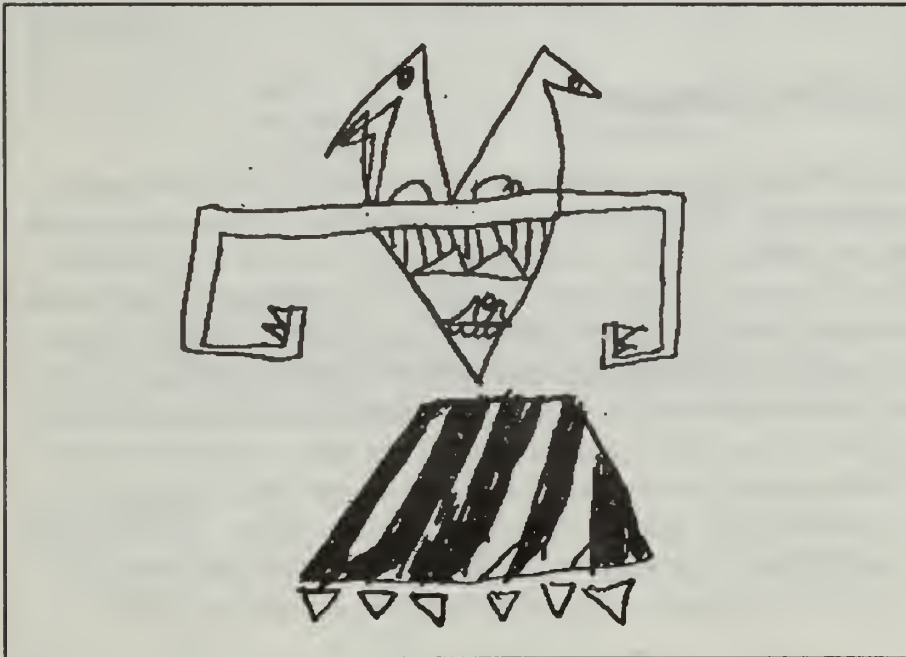
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## Young Stewards Club

The club would be an extension of the mass media campaign. A popular name for the club and a membership packet would be developed by Hollywood Promos. Club members would receive a newsletter twice a year designed by Hollywood Promos and written by the Imagination Team. The newsletter would include educational games, posters, calendars, highlights of fun and exciting activities involving history and archaeology, and information on national contests. Sources of private sector funding would be sought to make the newsletter self-sustaining.

## Discovery Exhibit

A major museum exhibit designed by Hollywood Promos and funded by an outside sponsor would build on the characters and themes developed in the mass media campaign and include interactive elements. The exhibit would be circulated, ideally, through the Smithsonian Traveling Exhibits Office, to locations throughout the country. The exhibit would be managed by the Imagination Team.



Jonathon Rivera, age 10

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**Goal: Sustain, with hands-on activities, students' interest in history, archaeology and science throughout higher levels of learning and strengthen student's sense of personal responsibility for the stewardship of America's cultural resources.**

Studies indicate that as children reach the third to fourth grade, there is a general tendency for their interest in the more difficult concepts of mathematics and science to give way to less difficult and entertaining activities. This is markedly true for minorities, girls and children from socially and economically deprived situations. These studies further indicate that this problem is caused by a lack of "hands-on" experiences that cultivate and stimulate a child's natural curiosity and rote learning that appears to have no immediate application or reward. Programs proposed to sustain students' interest will provide hands-on experiences that will challenge children to continue pursuing further learning activities. History and archaeology subjects which are inherently appealing to children will be used to provide compelling experiences involving math and science learning and to emphasize that science is relevant and meaningful to their lives and open to their participation. Programs will emphasize exploring, self-education, recreational learning, and experiences where nobody fails and will reveal the joy of scientific exploration and creativity. Basic stewardship messages will be repeated in multiple contexts to strengthen students' sense of personal responsibility for the protection of cultural properties. Programs will be developed for both formal and informal settings and involve a broad spectrum of activities.

### **Hands-on History and Archaeology**

The Imagination Team would work with BLM field offices to develop materials and programs for children in support of site interpretation, special events, museum exhibits and programs and other initiatives. In addition to developing new programs and products, the Imagination Team would seek to identify existing programs and materials developed by BLM field offices that could be expanded for Bureau-wide use. Priority would be given to products and programs that provide opportunities for "hands-on learning" experiences such as heritage education camps, junior speakers bureaus, museum camp-ins, local history contests, reenactments, living history experiences, reconstruc-

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tion of replica dwellings, handicraft activities, traveling trunks, etc. The Imagination Team would pilot activities and test products at the AHC and other field locations in conjunction with teachers, BLM field personnel and other partners. An Implementation Plan would be developed by the Working Group to establish, in more specific terms, the types of projects that would be supported and the mechanisms for involving all field offices and for ensuring a Bureauwide focus.

The Imagination Team would produce a State-by-State guide to all BLM heritage education activities and programs. The guide would be made available to teachers and the public nationwide. It would provide detailed information on all BLM educational programs supporting the goals of the heritage education program and be updated annually.

### **National Partnership Development Program**

This program would promote the establishment of partnerships with museums, theme parks, corporations, universities, non-profit organizations and other entities to develop educational programs and initiatives in support of the heritage education program. Monies would be set aside each year to support partnership projects proposed by State Directors. These could be ongoing or new projects and could, but would not necessarily, involve specific BLM cultural properties. A Partnership Coordinator would provide leadership in identifying prospective partners and in assisting field offices in developing proposed projects, either by corporate sponsorships, cost-sharing, donations, or other means. The Partnership Coordinator would review projects proposed by State Directors against the following criteria and provide recommendations to the Heritage Education Consulting Group for funding projects based on this review.

#### **Review Criteria:**

- relevance/contribution to heritage education program goals
- consistency with heritage education program principles
- measured success of existing programs
- alliances with other partners
- support of existing State partnerships
- planned involvement of teachers and/or education institutions



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- leveraging of other funding sources
  - numbers of students/teachers affected
  - planned use and dissemination strategies
  - planned evaluation strategies
  - cost effectiveness

At least once a year the Heritage Education Consulting Group would review the recommendations of the Partnership Coordinator and decide on the proposed projects to be funded that year.

### **Mobile Teacher Resource Center**

A mobile van equipped with educational resources for teachers would travel throughout the Nation. The van would be patterned on the National Aeronautics and Space Administration LASER van. The van would be equipped with computer workstations, videocassette recorders, printers, teaching resource materials, classroom activities, loan boxes, and hands-on activity kits. Teachers would preview and select materials that meet their educational goals. Teaching materials would emphasize innovative ways to use history and archaeology to attract children to study math, science and other required subjects.

### **Articles for Teacher Magazines**

Articles written for teacher magazines by the Imagination Team in collaboration with BLM resource specialists would highlight hands-on activities in archeology that would teach math, science and critical thinking skills. The initial goal would be to publish two 8-page articles per year in the National Science Teachers Association magazine, *Science & Children*, which has a reading audience of 60,000. Posters would be produced as pull-out inserts to accompany the articles. These would provide visual aids for the classroom, and include classroom activities on the back. The poster inserts would be similar to the one produced collaboratively by the U.S. Geological Survey, the Bureau of Reclamation and BLM on water resources which was published in the May 1991 issue of *Science & Children*.

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## Educational Television Programs for Children

Under this program BLM would support established, top-quality educational television programs for children that enhance children's interest in science, mathematics and technology. Initially, BLM would contribute funding for productions such as *The Third Voyage of the Mimi*, a television drama/documentary proposed by the Bank Street College Project in Science and Mathematics or a program of equal calibre.

*The Third Voyage of the Mimi* will contain episodes in a serialized dramatic adventure story about a field research expedition aboard the ketch *Mimi*, paired with documentary expeditions to visit experts at work in their respective specialties. The curriculum content will be designed for grades six through nine and focus on environmental science and applied mathematics with a secondary emphasis on the relationship between the physical geography and cultural history of the Mississippi. BLM would coordinate with the show's producers to develop a BLM-related cultural resource segment for the series.

*The Third Voyage* will include a television series, an overview teacher's guide, an illustrated student book of the television program, three classroom learning modules composed of microcomputer software, student tests and teacher's guides and an interactive archive of original source materials supporting the curriculum. Because of the interdisciplinary nature, teachers can use this material with a wide variety of their own curriculums. Female, minority and disabled scientists, technologists and science students are introduced as role models throughout the materials.

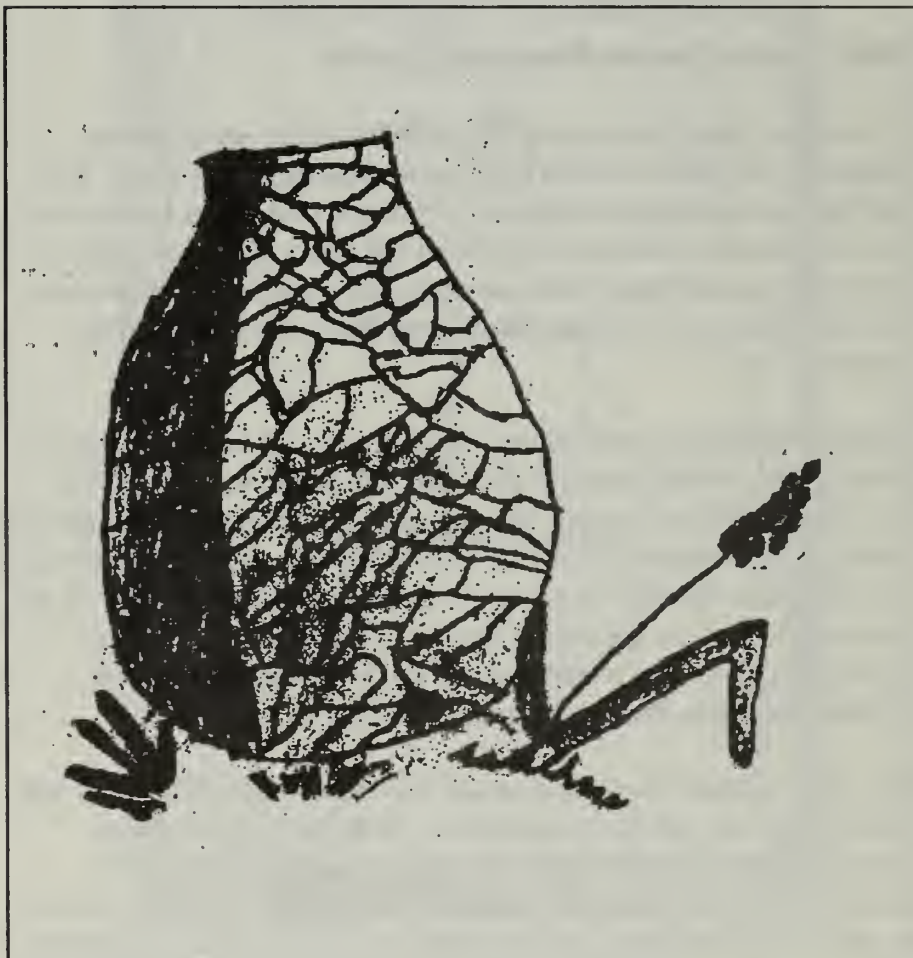


Stephen West, Age 9

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## History Mysteries

Activity books for children would be produced with themes tied to BLM's Adventures in the Past. Units would be included on mining, ranching, trails, the Old West, ghost towns, home town history, and family history, with information provided on how to research records about the past using BLM sources. The books would include puzzles and games involving archaeology and history related to BLM sites. They would contain stories and pictures both about and written by, children visiting BLM sites. The activity books would be distributed through cooperating associations. The books would be produced by the Imagination Team in collaboration with local BLM offices.



Tony Ferguson, age 9



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**Goal:** Enhance students' and teachers' science literacy, their knowledge of America's rich and diverse cultural heritage and students' skills in thinking and communicating through studies and experiences involving history and archaeology.

Programs to enhance knowledge and skills will reach a narrower audience but will provide more in-depth educational experiences and ones which are sustained over time. To take hold and mature, concepts must not just be presented to students from time to time but must be offered to them periodically in different contexts and expressed in a variety of ways at increasing levels of sophistication. This ensures that there are more opportunities for concepts to become imbedded in a student's knowledge system. Programs in this category will target both teachers and students.

### **Multi-media Teacher Resource Facility**

A computer-based, interactive multi-media facility would be the centerpiece of BLM's efforts to enhance knowledge and skills. The facility would consist of a custom curriculum maker that would allow teachers to access and choose from several hours of motion video segments, sounds, text, slides, pre-packaged multi-media curriculum sets and classroom activities focusing on history and archaeology subjects.

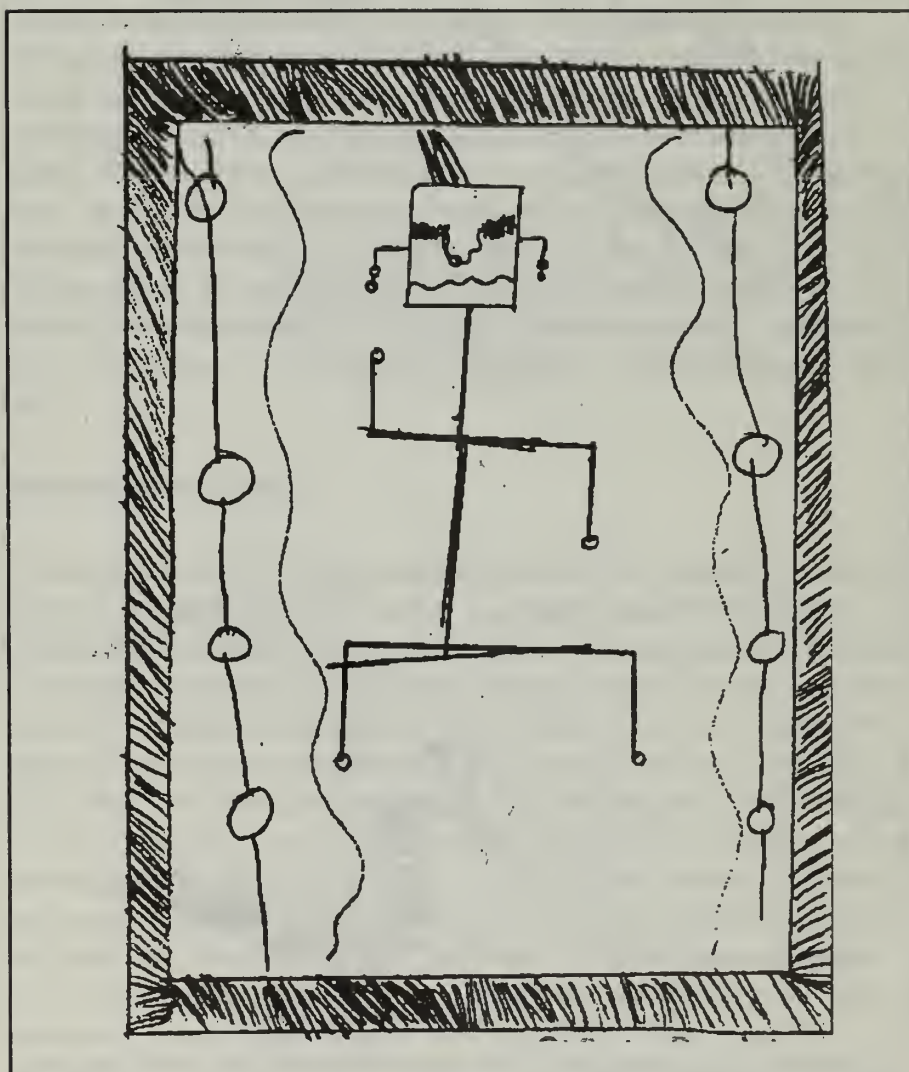
Teachers and other users visiting the station would be able to find the video, audio, or text materials they like and choose to view, hear or save them. Their selections, like shopping lists, would be arranged and automatically edited to their own VHS video tape, printed out, or saved on a computer diskette for use in the classroom. The flexibility of the system would allow teachers to produce many kinds of products, particularly those that would assist in teaching science and math, drawing examples from archaeology and history.

The system would also be a resource and reference for BLM staff and serve, in essence, as the central library for the heritage education program. Because all materials would be tagged by grade level, subject and other identifiers, materials could easily be pulled together by BLM field staff for classroom talks, special events and site-specific educational programs that were lively, comprehensive, teacher-tested

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and age appropriate. The Imagination Team would also use the system to facilitate the production of Project Archaeology and the History Mystery Series discussed elsewhere in this report. Because materials could be added or updated at any time, the system would remain current.

A facility such as the one described here is presently operating at the St. Louis Zoo's new Living World education center, enabling teachers from the St. Louis area to learn and create lessons about biology, ecology and natural history. It is designed for the naive user and requires no specialized training.

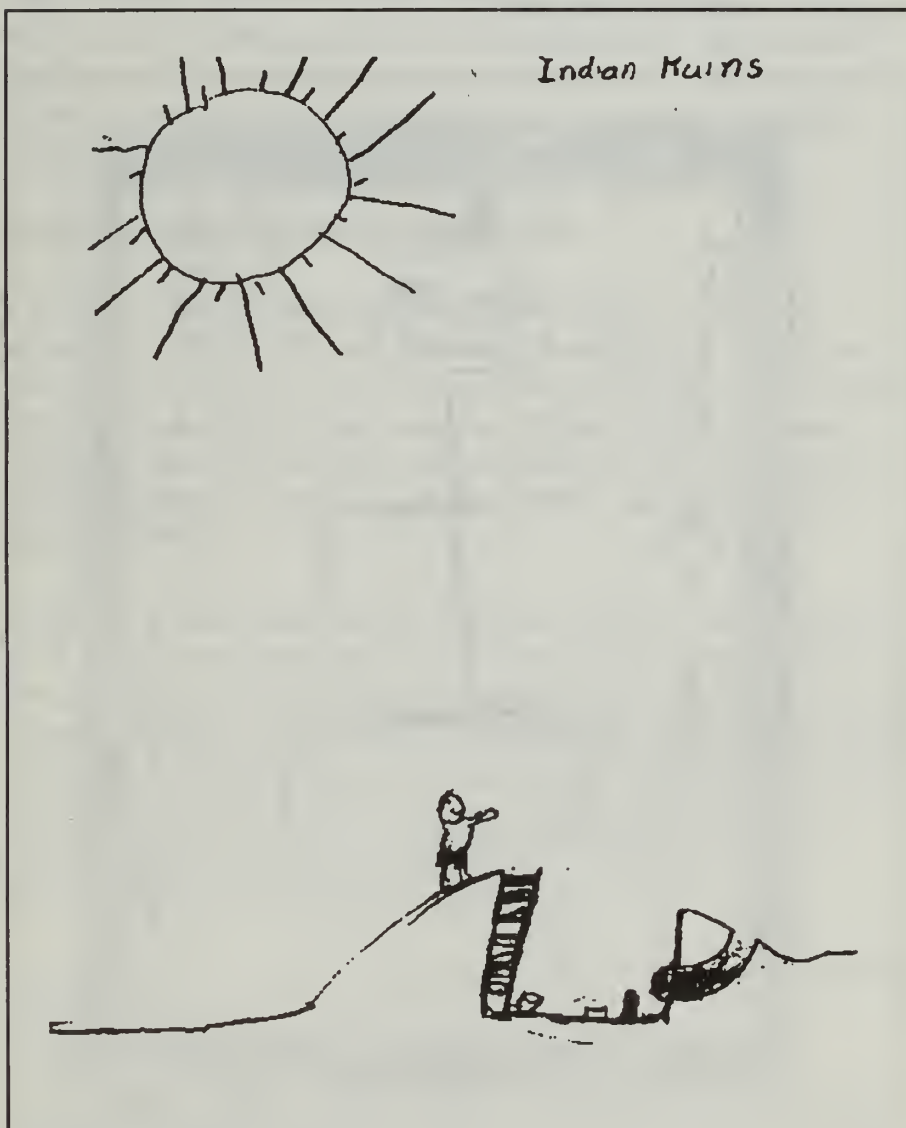


Elaine, age 10



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The facility would be located at the AHC and networked to computers throughout the Nation. It is expected that networking technology will be perfected within the next five years. It is further anticipated that it will take BLM at least five years to develop a prototype, collect the materials for the entire system, test the facility with teachers and other staff and make appropriate modifications. Thus, the system would not be ready for delivery to BLM offices and teachers throughout the Nation until the networking capability is available.



Jessica Granzella, age 8

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## **Project Archaeology**

BLM would develop a top-quality resource guide for teachers and youth group leaders with classroom activities that teach students about the science of archaeology and stewardship of cultural resources. The resource guide would take the best from existing archaeology education materials, including BLM developed curriculums. Teachers and leaders would be introduced to the guide through orientation workshops. A BLM archaeologist from each state would become the Project Archaeology expert and be responsible for building a teacher network and workshop program and for managing the program.

Project Archaeology would not be a curriculum nor a time and labor-intensive teaching program. By design, it would place a minimal burden on archaeologists and teachers. Activities would be tied to existing curriculums and provide innovative, hands-on approaches to teaching concepts across the curriculum, especially in science and math. The program would be general in nature and usable nationwide, with the activity guide forming a basis upon which regionally-specific resources and information could be built. Project Archaeology would be developed by the Imagination Team following an evaluation of existing resource materials and teacher workshop models conducted by the Utah State Office archaeologist and an archeo-educator consultant.

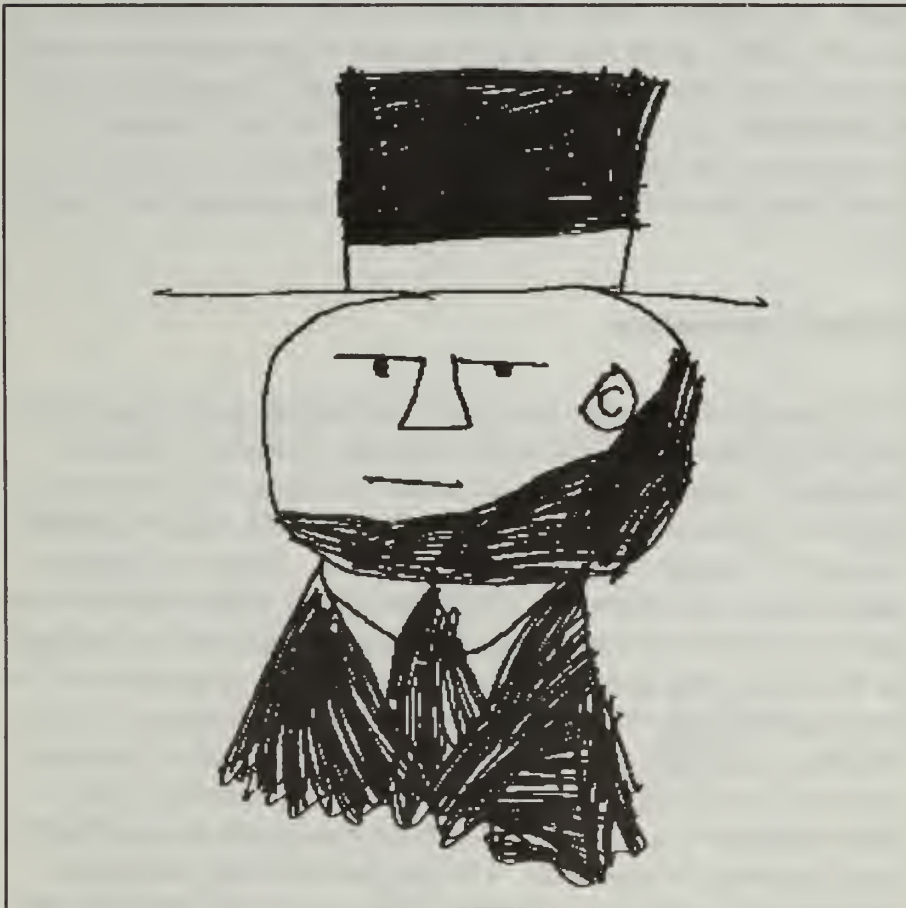
## **Student Internships**

The high school internship program would provide selected students with an archaeological field and/or laboratory research experience designed to enhance science, math, history, writing, and critical thinking skills. Participants would observe first-hand the current technologies and techniques of archeological research. Interns could work directly under the supervision of a BLM cultural resource specialist or with one of the many cooperators or volunteer organizations working on the public lands under cost share arrangements. Students would be encouraged to share their experiences with fellow students and teachers upon returning to the classroom. Earthwatch, a national volunteer organization offering scientific field research opportunities to high school students in a variety of disciplines, has offered to assist BLM in screening potential applicants. The Imagination Team would be responsible for program coordination. Costs would be borne by BLM or, possibly, by cooperators or corporate sponsors.

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## Teacher Internships

High school and college teachers would be given an opportunity for one-on-one learning experiences with various BLM archaeologists in field situations lasting four to six weeks. This would include observation and participation in the actual on-the-ground management of archaeological and historical sites, with experiences focused on activities like surveying and field recording of sites, as well as archival research for site identification and interpretation. Teachers would be encouraged to develop classroom activities based on their field experience that could be shared with other teachers through the National Science Teachers Association magazines or other teacher magazines. The program would be coordinated by the Imagination Team. Costs would be borne by BLM or, possibly, by cooperators or corporate sponsors.

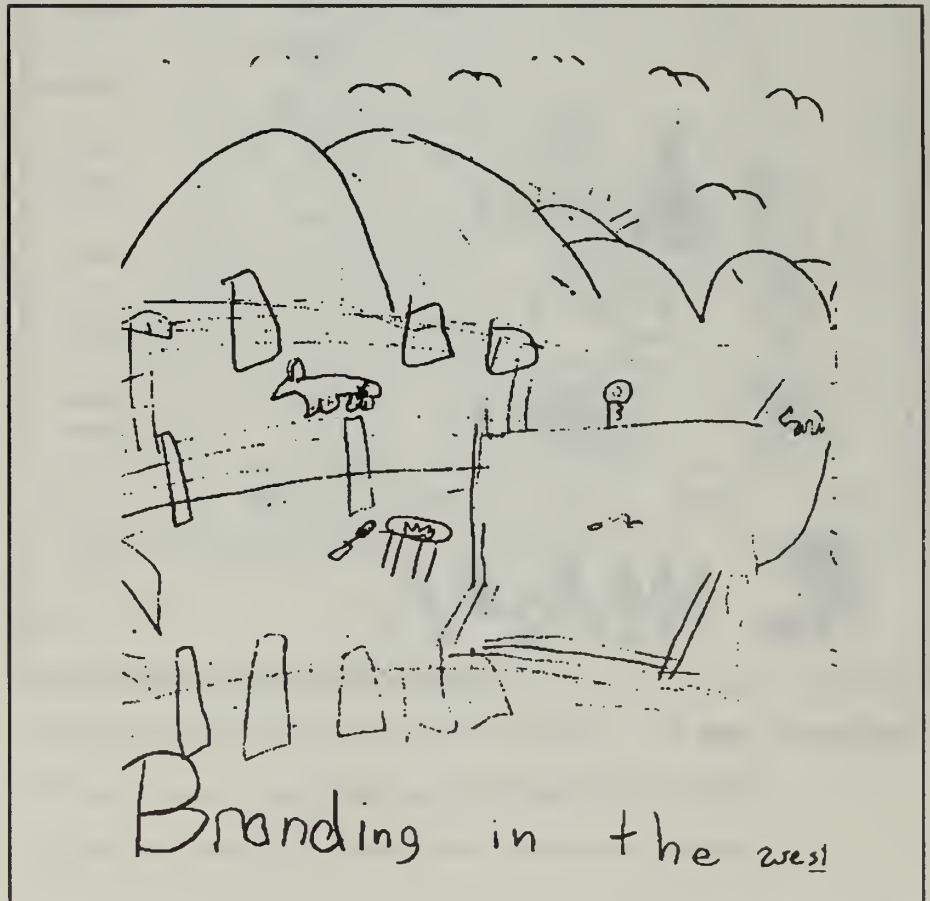


Ryan Barna, age 7

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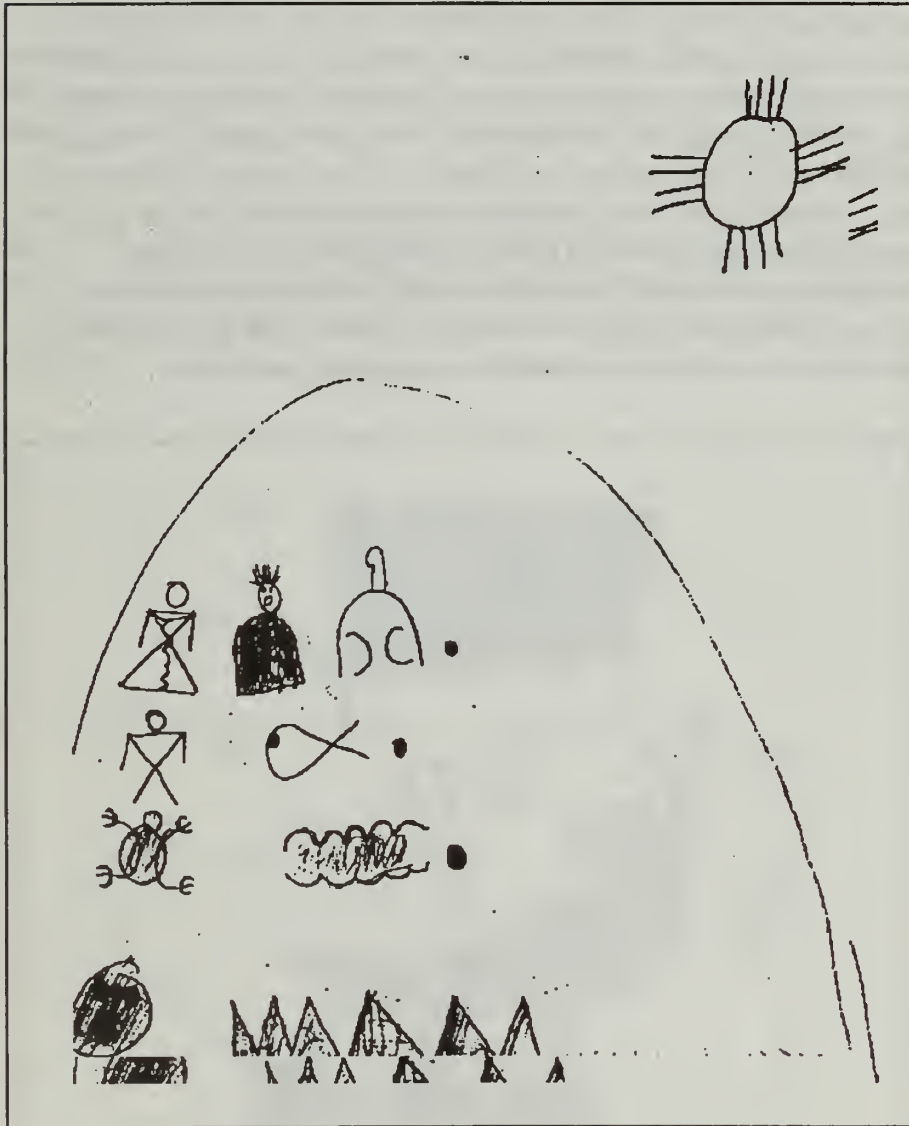
## College Grants Program

BLM would administer a program of grants to college students for research and development efforts supporting BLM's cultural heritage education program. Grants could be awarded, for example, for the development of history and archaeology computer software programs for classroom use, the development of strategies for evaluating BLM heritage education programs or the development of distribution strategies for BLM programs and materials. The grants program would be administered by the Imagination Team. A list of research and study topics of interest to BLM would be developed annually by the team in consultation with BLM field offices and distributed to colleges throughout the Nation. Historically Black and Hispanic American Colleges and Universities as well as Native American colleges and universities would be specifically encouraged to participate.



Abble Veach, age 8





Naia Wells, age 9



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## Budget Summary

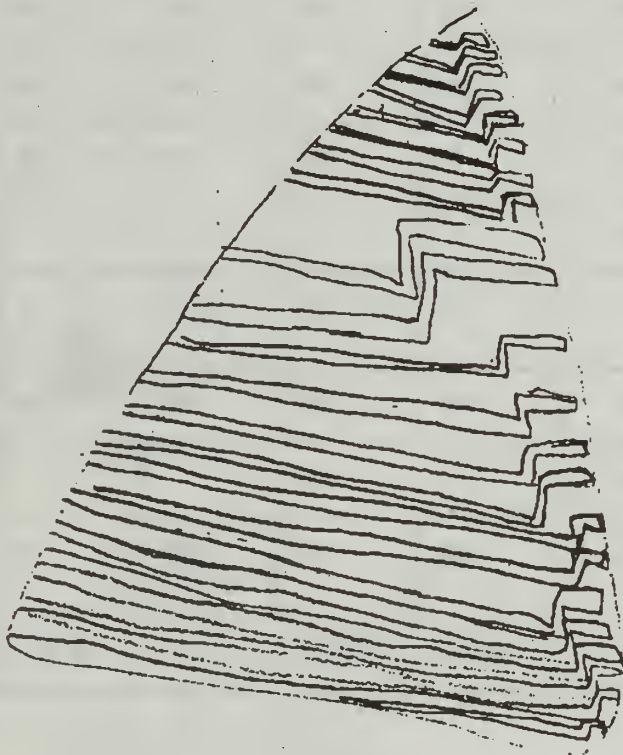
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	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Personnel</b>					
Permanent	\$ 300	\$ 500	\$ 500	\$ 550	\$ 550
Temporary	25	150	80	80	80
Volunteer	60	85	85	85	85
<b>Operations</b>					
Admin. Support	50	60	60	60	60
Contracts	543	535	625	610	625
Equipment		700			
Challenge Grants	600	825	625	625	625
<b>Total</b>	<b>\$1,578</b>	<b>\$2,855</b>	<b>\$1,975</b>	<b>\$2,010</b>	<b>\$2,025</b>

### Notes:

- Numbers shown are in thousands of dollars.
- Volunteer support refers to student and teacher interns.
- Administrative support is for overhead at the Anasazi Heritage Center.
- Contract costs would be for studies, professional services, software development and printing.

piece of pottery



Flodina Jones, Age 8

# Five Year Work Plan

## Goal 1: Capture Attention

### Discovery Campaign

Working Group oversees Hollywood Promos' promotional campaign (PSAs, print, "promo," video, collateral materials, distribution/publicity plans)

Hollywood Promos coordinates with sponsor

### Young Stewards Club

Working Group oversees development of membership package and design of club magazine

AHC produces/distributes first issue of magazine

Imagination Team produces subsequent issues

### Discovery Exhibit

Working Group oversees development of exhibit by Hollywood Promos; coordinates with Smithsonian

Imagination Team prepares exhibit for touring

BLM maintains exhibit

### Subtotal

	Year 1	Year 2	Year 3	Year 4	Year 5
	25,000	25,000			
	-0-				
	-0-				
	15,000				
		10,000	10,000	10,000	10,000
	25,000				
		25,000			
			5,000	5,000	5,000
	\$65,000	\$60,000	\$15,000	\$15,000	\$15,000

## Goal 2: Sustain Interest

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Hands-on History and Archaeology</b>					
Working Group prepares implementation plan for Imagination Team, including functional statement, roles, PDs, equipment needs, etc.	8,000				
BLM hires, equips, covers AHC overhead for Team	200,000	360,000	360,000	360,000	360,000
Imagination Team develops hands-on programs and products in support of field initiatives, Young Stewards Magazine, Mobile Resource Center, Teacher Facility etc.	250,000	250,000	250,000	250,000	250,000
<b>National Partnership Program</b>					
Working Group writes PD for National Partnerships Coordinator position; BLM hires	50,000	50,000	50,000	50,000	50,000
Coordinator solicits educational proposals, awards grants, and negotiates national level partnerships in consultation with the Consulting Group	350,000	550,000	550,000	550,000	550,000
Working Group writes PDs for education specialists to assist Coordinator; BLM hires	50,000	50,000	50,000	100,000	100,000
<b>Mobile Teacher Resource Center</b>					
Imagintaion Team prepares statement-of-work for mobile resource center; contract awarded		30,000			
BLM purchases mobile van with equipment installed		300,000			
Imagination Team writes PD for van operator/driver; hires		50,000	50,000	50,000	50,000
BLM maintains/updates automated resource materials			50,000	50,000	50,000
<b>Publications in Teacher Magazines</b>					
Imagination Team writes articles, etc. for teacher magazines	35,000	25,000	15,000	15,000	15,000



## Public TV Programs for Children

Working Group coordinates with television producers on BLM-based TV segment

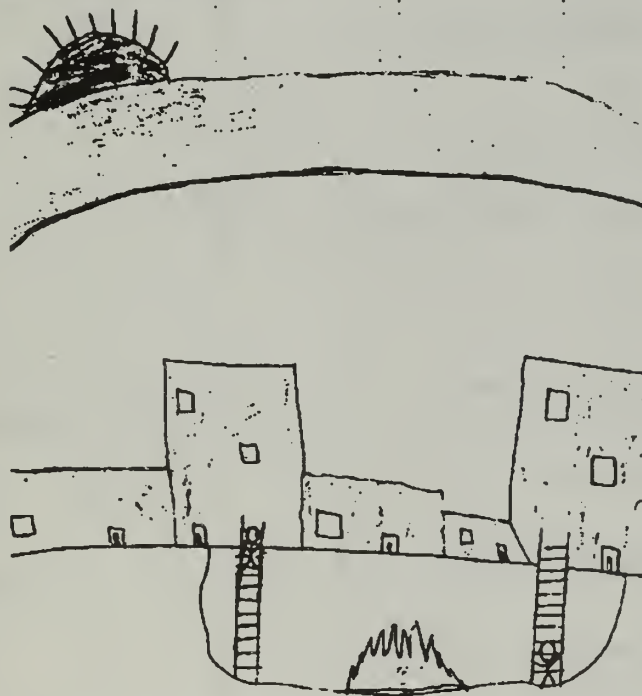
Imagination Team coordinates with other TV producers on development of BLM-based segments

## History Activities Publication Series

Imagination Team writes children's "History Mystery" activity books on Adventures in the Past themes

### Subtotal

Year 1	Year 2	Year 3	Year 4	Year 5
200,000	200,000			
		200,000	200,000	200,000
100,000	100,000	100,000	100,000	100,000
\$1,273,000	\$1,935,000	\$1,675,000	\$1,725,000	\$1,725,000



Peter Myers, age 9

## Goal 3: Enhance Knowledge and Skills

Year 1      Year 2      Year 3      Year 4      Year 5

### Multi-Media Teacher Resource Facility

Imagination Team develops statement-of-work for prototype design; awards contract

25,000

Team oversees contract (serves as COAR, reviews products, with States develops materials)

50,000

50,000

Team works with States to develop materials

150,000

BLM purchases completed facility

400,000

BLM operates and maintains (refines, updates, adds to) facility

80,000

80,000

80,000

### Project Archaeology

Utah archaeologist develops statement-of-work to evaluate existing archaeology education programs/workshops; awards contract

25,000

Utah archaeologist develops statement-of-work for archaeo-educator consultant; awards contract

5,000

Utah archaeologist writes position description, and BLM hires teacher for 1 year

25,000

Working Group prepares guidelines for "Project Archaeology" activity guide

-0-

Imagination Team develops/produces activity guide; BLM publishes

100,000

25,000

15,000

15,000

Imagination Team prepares guidelines for State-specific teaching resources

-0-

Imagination Team conducts workshops to train State experts on Project Archaeology

20,000

15,000

15,000

Imagination Team develops statement-of-work to formally evaluate Project Archaeology; awards contract

15,000

**Year 1      Year 2      Year 3      Year 4      Year 5**

### **Student Internships**

BLM develops coop agreement with Earthwatch for student field internships; BLM partially funds

Imagination Team solicits and funds high school interns conducting educational research and fieldwork

### **Teacher Internships**

Imagination Team solicits and provides field internships for high school and college teachers

### **College Grants Program**

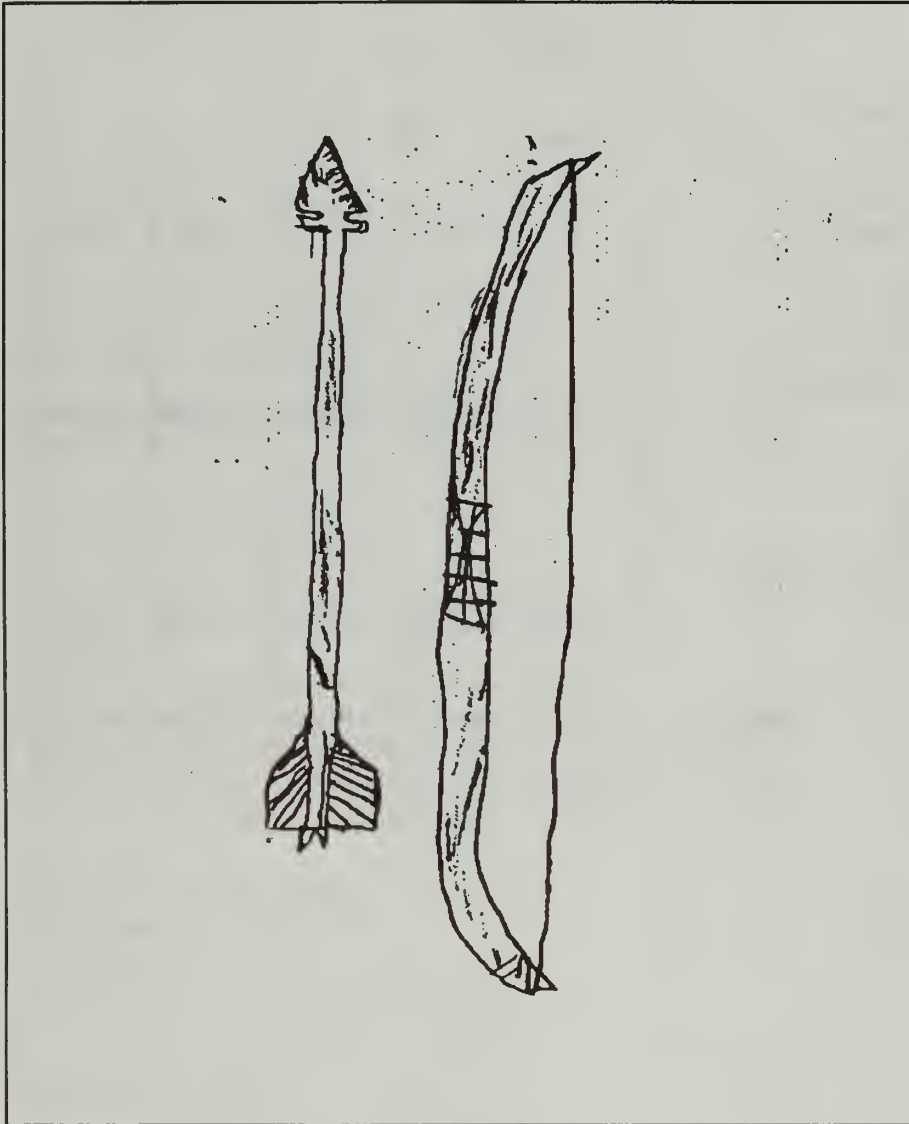
Imagination Team identifies priority educational research needs in consultation with States; solicits and awards grants to universities

35,000				
	35,000	35,000	35,000	35,000
25,000	50,000	50,000	50,000	50,000
50,000	75,000	75,000	75,000	75,000
<b>Subtotal</b>	\$240,000	\$860,000	\$285,000	\$270,000
<b>Total</b>	\$1,578,000	\$ 2,855,000	\$1,975,000	\$ 2,010,000

### **Five Year Total**

**\$10,443,000**  
(includes 11 FTEs)





John Aaron, Age 11



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- 1989 Archaeology in the Classroom: A Case Study from Arizona. Archaeological Assistance Division Technical Brief No. 4, National Park Service, Washington, D.C.
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- 1989 An Investigation of the Semantic Meaning Assigned to Concepts Affiliated with STS Education and of STS Instructional Practices Among a Sample of Exemplary Science Teachers. *Journal of Research in Science Teaching* 26(8):687-702.
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- 1990 Science for All Americans. Oxford University Press, New York.
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- Simmons, Deborah A.
- 1989 More Infusion Confusion: A Look at Environmental Education Curriculum Materials. *Journal of Environmental Education* 20(4):15-18.
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- 1989 Archaeology In The Toronto School System: The Archaeological Resource Centre. In *The Excluded Past* by Peter Stone and Robert McKenzie (editors), Unwin Hyman, London, England.
- 1989 Toronto Students Dig Into Their Past! The Archaeological Resource Centre. Teaching Anthropology Newsletter 14, Spring 1989, Department of Anthropology, Saint Mary's University, Halifax, Nova Scotia.
- 1990 Thorton Blackburn's Early Toronto: A Curriculum Package. Proposal under the Black Education Report. Archaeological Resource Centre, Department of Continuing Education, Toronto Board of Education, Toronto, Ontario.

Smith, K.C.

- 1991 Building Bridges to the Past: Proposal for a Public Education Workshop for Professional Archaeologists. Joint proposal between the Society for American Archaeology and the Society for Historical Archaeology.

Smith, K.C.

- 1991 At Last, A Meeting of Minds. *Archaeology Magazine* January/February 1991:36-46.

Smith, Shelley J., Danielle M. Paterson, and Jeanne M. Moe

- 1991 *Intrigue of the Past: Investigating Archaeology*. Curriculum sponsored by the Utah Interagency Task Force on Cultural Resources (Bureau of Land Management, State of Utah, National Park Service, U.S. Forest Service).

Society for American Archaeology

- 1990 Action Plan. Task Force on Public Education, March 19, 1990.

Thier, Herbert D.

- 1984 Developing Effective Exhibits for the Expanding Role of Museums. *Curator* 27(2):93-103.

Tisdale, Mary

- 1990 Getting a Perspective on BLM's Role in Education. Office of External of External Affairs, Bureau of Land Management, Washington, D.C.

Toney, Sara D. et al

- 1985 *Smithsonian Surprises, An Educational Activity Book*. Smithsonian Institution Press, Washington, D.C.

U.S. Department of Education

- n.d. Science Education Programs That Work: A Collection of Proven Exemplary Education Programs and Practices in the National Diffusion Network. Office of Education Research and Improvement, U.S. Department of Education, Washington, D.C.

- 1991 AMERICA 2000: An Education Strategy. U.S. Department of Education, Washington, D.C.

U.S. Environmental Protection Agency

- 1991 1991 Progress Report. Office of Environmental Education. February 1991. Washington, D.C.
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- n.d. Water: The Resource That Gets Used And Used And Used For Everything. Poster cooperatively funded by U.S. Geological Survey, the U.S. Bureau of Land Management, the U.S. Bureau of Reclamation, and the American Water Resources Association, Denver.

Voris, Helen H., Maija Sedzielarz and Carolyn P. Blackmon

- 1986 Teach the Mind, Touch the Spirit, A Guide to Focused Field Trips. Department of Education, Field Museum of Natural History, Chicago, Illinois.

Vrabel, Deborah

- 1991 Stories of the Past: Comparisons from Great Britain. Paper presented at the Society for American Archaeology, Symposium on The Public Interpretation of Archaeological Sites: Problems and Issues, April 26, New Orleans.

Wade, Ruth K.

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Western Regional Environmental Education Council

- 1983,  
1985, Project WILD Elementary/Secondary Activity Guide.  
1986 Western Regional Environmental Council, Boulder.

#### Incomplete Citations:

Gardella, Ron

- n.d. Assessing Environmental Education Curricula: The Environmental Education Curriculum Inventory, Forms A & B.

Monroe, Martha C.

- n.d. Actions Speak Louder than Words...or Do They? Environmental Problem Solving in the Classroom.

MacDonald, Catherine

- n.d. Archaeology and Curriculum Development, Social Sciences Department, Father L.J. Austin C.S.S., Ontario, Canada.

Winedale Seminar, Texas Historical Society

- 1987 Age Group Characteristics (handout).



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## **Journals and Newsletters Researched**

American Association for State and Local History  
HISTORY NEWS

American Association of Museums  
MUSEUM NEWS

American Museum of Natural History  
CURATOR

Archaeological Institute of America  
ARCHAEOLOGY MAGAZINE

Cobblestone Publishing Company, Inc.  
CALLIOPE  
COBBLESTONE  
FACES

CEHP Incorporated (Conservation, Environment and Historic Preservation)  
PASSPORT IN TIME NEWSLETTER, published with the U.S.D.A. Forest Service, Washington D.C.

Earthwatch  
EARTHWATCH

Foundation for Field Research  
EXPLORER NEWS

National Council for the Social Studies  
SOCIAL EDUCATION  
THE SOCIAL STUDIES PROFESSIONAL, NEWSLETTER

National Geographic Society  
NATIONAL GEOGRAPHIC WORLD

National Park Service  
INTERPRETATION  
TECHNICAL BRIEFS

National Science Teachers Association, Washington D.C.  
JOURNAL OF COLLEGE SCIENCE TEACHING  
NSTA REPORTS  
SCIENCE AND CHILDREN  
THE SCIENCE TEACHER  
SCIENCE SCOPE, A Journal for Middle and Junior High School Science Teachers  
SPECIAL PUBLICATION

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Smithsonian Institute, Museum of Natural History  
ANTHRO.NOTES, Bulletin for Teachers

Society for American Archaeology, Committee on Public Education  
ARCHAEOLOGY AND PUBLIC EDUCATION NEWSLETTER

Toronto Board of Education, Archaeological Resource Centre  
ARCHAEOLOGY AND EDUCATION

## **Promotional Packages and Program Materials Reviewed**

Arnowitz Productions, Inc.

- 1990 Promotional package for Interactive Multimedia Resource Interface, (descriptive materials, press releases, product demonstration video). Arnowitz Productions, Inc., 488 Green Glen Way, Mill Valley, California 94941.

Bureau of Land Management, Anasazi Heritage Center

- 1991 Anasazi Life and The Last Pictograph (Computer Games), Teacher Packet and other outreach materials developed for teachers and students.
- 1984 The Anasazi Educational Outreach Program, Curriculum Units for Kindergarten through Sixth Grades, in cooperation with the Southwest Board of Cooperative Services, Cortez, Colorado.

Gibbon, Samuel Y. Jr.

- 1990 A Proposal for the Third Voyage of the Mimi, submitted to the National Science Foundation by the Bank Street College Project in Science and Mathematics, May 15, 1990.

Hands On Science Outreach Inc.

- 1991 Materials developed for after school outreach and science enrichment, Maryland.

Hands-On Science, Inc.

- 1989 Science Enrichment, Materials produced for young scientists through Amoco Production Company, the Tulsa Public Schools and Junior League of Tulsa, Inc.

Interact, Learning through Involvement

- 1991 Homestead, Pioneers, Dig 2 and other Elementary, Middle School and High School Studies Simulations, Lakeside, California.

National Aeronautics and Space Administration

Project LASER and other educational programs ranging from Space Camp to publications.

National Association of Partners in Education, Inc.

- 1991 Partners in Education. Newsletters, materials and conferences, Alexandria, Virginia.

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#### National Park Service

- 1990 Power To Production. National Park Service School Program Package, Lowell National Historical Park, Lowell Heritage State Park, Lowell, Massachusetts.
- 1990 Hope and Hardship: The Immigrant Experience. National Park Service School Program Package, Lowell National Historical Park, Lowell Heritage State Park, Lowell, Massachusetts.

#### Smithsonian Institute, National Museum of Natural History

- 1991 Anthropological Materials Available to Teachers, etc. from Teacher's Packets to Technical Bulletins.

#### United States Fish and Wildlife Service

Projects, programs and units ranging from The Bay BC's. To Estuaries and Tidal Marshes (Habitat Pac). Arlington, VA.

### Individuals and Groups Contacted

#### Print and Electronic Media Specialists

Ann Peck, Producer  
Arnowitz Productions, Mill Valley, California  
Bank Steet College of Education (Voyage of the Mimi)  
Cobblestone Press  
Hollywood Promos, Arlington, Virginia  
IBM, Multi-Media Projects for Smithsonian and National Geographic  
National Geographic World, Washington D.C.  
National Geographic, Washington D.C.

#### Educational and Related Associations

National Science Teachers Association, Washington D.C.  
National Council for the Social Studies, Washington D.C.  
Partners in Education

#### Education Specialists

Dr. Patricia Flint, Colorado Archaeological Society Education Conference  
Beverly Hancock, Curator of Education, Wake Forest University  
Dr. Carol Kubota, University of Washington  
Nan McNutt, Private Consultant  
Dr. Marion Rice, formerly University of Georgia  
Karolyn Smardz, Archaeological Resource Centre, Toronto Board of Education

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#### Federal Agencies

- National Aeronautics and Space Administration, Office of Education, Washington D.C.
- National Archives
- National Endowment for the Humanities
- National Endowment for the Arts
- National Institute for Standards and Technology
- National Park Service, National Register, Interpretation, Archaeological Assistance Division, Mesa Verde N.P.
- National Trust for Historic Preservation
- Soil Conservation Service
- U.S. Fish and Wildlife Service
- U.S. Forest Service

#### Museums, Interpretive Centers and Parks

- Arizona State Museum
- Children's Museum of Denver
- Children's Museum of Houston
- Denver Museum of Natural History
- Edge of the Cedars Museum, Utah
- Heard Museum
- High Desert Museum, Oregon
- Homolovi Ruins State Park, Winslow, Arizona
- Longmont Museum, Colorado
- Maxwell Museum of Anthropology, University of New Mexico
- Museum of Western Colorado
- Smithsonian, Natural History Museum
- Western Wyoming College, Natural History Museum

#### Professional Societies, Universities and Educational Centers

- American Association for the Advancement of Science
- Archaeological Resource Centre, Toronto Board of Education
- Arizona Archaeological Council, Archaeology for the Schools Committee
- Association of Science and Technology, Washington D.C.
- Crow Canyon Archaeological Center, Cortez, Colorado
- Indiana University, Audiovisual Department
- Society for American Archaeology, Task Force on Education
- University of Georgia, Anthropology Curriculum Project
- University of Nevada, Reno

#### Public Lands Groups

- Public Lands Council

#### Volunteer/Non-Profit Organizations

- Earthwatch
- Foundation for Field Research



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### Youth Groups

Boy Scouts of America  
Scouting Magazine

### Education Enrichment Programs

Hands On Science Program, Rockville, MD.  
Resource for Education, Tulsa, Oklahoma

### Theme Park Experts

Old Salem, Winston-Salem, North Carolina  
Old Sturbridge Village, Sturbridge, Massachusetts  
Colonial Williamsburg, Williamsburg, Virginia  
Knott's Berry Farm, Buena Park, California  
Epcot Center, Lake Buena Vista, Florida  
Sea-World, Orlando, Florida

### Conferences and Working Groups - Instructors and Participants Contacted

Colorado-Wyoming Association of Museums, Pre-Conference Workshop on Archaeology and Education, May 2, 1991, at Anasazi Heritage Center (BLM)—Specifically contacted:

Margaret Heath, Educator, Crow Canyon Arch.Center, CO.  
Arthur Hutchinson, Interpreter, Mesa Verde N. Park., Colorado  
Thomas Vaughan, Interpreter, Anasazi Heritage Ctr. BLM, Michael Williams, Museum Interpreter, Anasazi Heritage Center, Kent Brown, Director, Longmont Museum, Colorado  
Sherry Roastingear, Teacher, Pagosa Springs, Colorado  
Ed DeFrancia, Teacher, Dolores, Colorado

University of Nevada, Reno course "Presenting the Past to the Present", May 20-24, 1991 at the Anasazi Heritage Center (BLM)

Four instructors and twenty-four students involved including BLM archaeologists, interpreters, etc.

Bureau of Land Management course "8100-6, Cultural Resources for Managers", May 13-16, 1991 at the Anasazi Heritage Center (BLM)

Seven instructors and twenty manager/staff participants

### Society for American Archaeology, Sub-Committee on Formal Education

Ed Friedman, Bureau of Reclamation  
Phyllis Messenger, University of Minnesota  
KC Smith, Museum outreach educator  
Nan McNutt, Author of PAST  
Carol Ellick, Arizona Archaeological Council  
Paul Hooe, County Historical Society, PhD candidate in Archaeo-education  
Pat Cheeney, Teacher  
Alice Kehoe, University of Wisconsin  
Betty LaFree, National Park Service, archaeo-educator, former teacher

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Cathy MacDonald, Teacher, curriculum specialist, Ontario  
Karolyn Smardz, Archaeo-educator, Archaeological Resource  
Center, Ontario

#### Intrigue of the Past - List of Contacts

Daphne Sewing, Project WILD Coordinator, Utah Division of  
Wildlife Resources  
Vern Fridlay, Executive Director, Utah Society for Environmental Education  
Gene Rogge, Arizona Archaeological Council, Archaeology for the Schools Committee  
Boone Colgrove, Social Studies Director, Utah State Office of Education  
Wil Numkena, Indian Education, Utah State Office of Education  
Sharlee Doxey, Sixth grade teacher, sand-box archaeology  
Clifford Duncan, Director Ute Tribal Museum, Fort Duchesne  
Gina Hoeffler, Project Learning Tree teacher trainer  
Nola Lodge, Indian educator, University of Utah  
Donna Deyhl, Anthropology graduate student, Indian Education studies, University of Utah  
Paul Enciso, Granite School District, Multi-Cultural Center

#### Bureau of Land Management Contacts

##### Washington Office

Volunteer Coordinator, Law Enforcement Specialist, Recreation Specialist, Historian, LIS  
Specialist

##### Service Center

Archaeologist/GIS Specialist, Recruitment/Archaeologist

##### Alaska

Resource Apprenticeship Program Specialist, Archaeologists

##### Arizona

Archaeologists, Training Specialist, Public Affairs

##### California

Archaeologists, District Manager, Outdoor Recreation Planner

##### Colorado

Realty Specialist, Historian, Interpretive Specialists, Archaeologists, Area Manager, Public  
Affairs, District Manager

##### Idaho

Archaeologist, Wildlife Biologist

##### Montana

Archaeologists, Collections Mgr., District Managers

##### Nevada

Visitor Use Specialist, Archaeologists, Area Manager

##### New Mexico

Supervisory Resource Mgr., Archaeologists, Interpretive Specialist

##### Oregon

Public Affairs, Archaeologist, Geologist, Park Manager

##### Utah

Branch Chief, Archaeologist

##### Wyoming

Archaeologist







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